Australia.

COMMONWEALTH BUREAU OF CENSUS AND STATISTICS,
MELBOURNE.

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1911

OFFICIAL YEAR BOOK

OF THE

COMMONWEALTH OF AUSTRALIA,

CONTAINING AUTHORITATIVE STATISTICS FOR THE PERIOD

1901-1910

AND CORRECTED STATISTICS FOR THE PERIOD 1788 TO 1900.

No. 4.—1911.

PUBLISHED UNDER THE AUTHORITY OF THE MINISTER FOR HOME AFFAIRS,

BY

G. H. KNIBBS, C.M.G.,
FELLOW OF THE ROYAL STATISTICAL SOCIETY, ETC., ETC.
COMMONWEALTH STATISTICIAN.

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PREFACE.

By the Constitution of the Commonwealth of Australia, the Commonwealth is empowered "to make laws for the peace, order, and good government of the Commonwealth, with respect to," *inter alia*, "Census and Statistics." In exercising the power so conferred, a "Census and Statistics Act" was passed in 1905, and in the year following the "Commonwealth Bureau of Census and Statistics" was created. The publication here presented is the fourth authoritative Year Book issued under the Federal Constitution.

This Year Book furnishes corrected statistics for the whole period of Australian settlement, viz., from 1788 to 1910. Wherever space has permitted, detailed statistics have been furnished for each year since Federation, viz., from 1901 to 1910. In the few instances where this has proved impracticable, reference will be necessary to Year Books Nos. 1, 2 and 3. The inclusion, as stated, of the tota available information in the more important branches of statistics enables this publication to be used wherever it is desired to make a comparative survey of the unfolding of this portion of the British Empire. Not only are the results given for the Commonwealth as a whole, but also for each State therein.

The general arrangement of the publication corresponds with that of previous issues, and is shewn in the synopsis on pp. xi. to xxvii. immediately following. This arrangement has been widely commended, and will be substantially adhered to in future issues.

In addition, however, to what may be called purely statistical matter, each issue contains special articles dealing at length with some particular subject or subjects of more or less permanent interest. To repeat these year after year would unduly increase the size of the publication. It was stated, therefore, in the preface to Year Book No. 1 that, as a rule, only a brief condensation of the special articles would appear in subsequent issues of the Year Book, or they might be omitted altogether. Consistently with this intention considerable changes will be found to have been made. In many cases the articles in Year Books Nos. 1, 2 and 3 have been reduced to synopses; in other cases matter has been wholly deleted, and new matter introduced in lieu thereof, and specially important subjects have been more exhaustively discussed. An index to such special articles, etc., as have been published only in previous issues of the Year Book has been compiled and is included herein (see page viii.)

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The present issue of the Year Book contains several new features of interest. Among these may be mentioned the section dealing with the Lakes of Australia, Seismology in Australia, particulars relating to the first year's operations under the Old Age Pensions Act, the schemes of organisation under the recent Defence Acts, and a comprehensive account of the Federal Capital movement. Among the various additions and improvements to the maps and graphs, the maps shewing the distribution of rainfall and the railway systems of the Commonwealth may be specially mentioned; four new maps relating to the Federal Capital Territory have also been included.

Through the co-operation of the various State Bureaux with the Commonwealth Bureau it has been possible to still further advance the accuracy, and in general the intrinsic value, of Australian Statistics, and the collection of data is being continually improved.

It has been found desirable to deal with the subject matter from a twofold, and to some extent, from a threefold aspect, viz.:—

(i.) The development of the individual States :
(ii.) The progress of Australia as a whole from the earliest times :
(iii.) The statistical comparison of Australia with other leading countries of the world :

this last, however, being somewhat restricted.

In the endeavour to supply reliable details of this character, considerable difficulties have been experienced, more particularly as regards the early years of Australian colonisation, and although assistance has been cordially rendered not only by the State Statistical Bureaux, but also by other State Departments that were in a position to help, the results obtained must in many cases be considered as roughly approximate only. No effort is spared, however, to embody the most reliable information available.

A feature of this publication is the use made of maps and diagrams. The changing boundaries of the various States, the course of exploration, the orography and geology of the territory, the distribution of the population of Australia, of its rainfall, etc., the development of its railway system, and similar facts can be properly appreciated only by the use of maps. In like manner the progress of events, the characteristics of growth and decline, can in general be grasped much more readily graphically than numerically. The diagram or "graph" is a direct picture in which the relative magnitudes are preserved and by which instantaneous comparisons of a wide range of facts are made possible at a glance. For the more accurate examinations of statistical data, however, numerical results are also given *in extenso*.

The development of Australia has been in many instances very remarkable, and this could be shewn only by tables and graphs dating back to its beginning in 1788. In most cases accurate data are not available for years much before 1860. In such cases, therefore, it seemed sufficient at present to give continuous results from that year onwards.

The great mass of material embodied in this Year Book has been carefully examined, but it would be idle to hope that all error has been avoided. The Commonwealth Statistician desires to express appreciation of the opportunity afforded him of perfecting the matter of the Year Book, by those who have been kind enough to point out defects or make suggestions.

The corresponding years indicated in various sections of this book do not always necessarily refer to the same period. Though the years specified ordinarily refer to the calendar years, in certain sections—*e.g.*, the sections on *Railways*, and on *Commonwealth, State, and Private Finance*—the years indicated generally refer to the financial years ended the 30th June. Again, as regards the section on *Agricultural Production*, the year ordinarily ends on the 31st March, while in the section on *Local Government* the financial years of local bodies in the several States end at various dates. The precise period for which returns are given is indicated where necessary.

Recent information or returns which have come to hand since the various Sections were sent to press, may be found in the Appendix, p. 1186 *et seq.*

In conclusion, the Commonwealth Statistician desires to express his cordial thanks to the State Statisticians, and to the responsible officers of the various Commonwealth and State Departments, who have kindly, and often at considerable trouble, supplied all desired information.

G. H. KNIBBS,
Commonwealth Statistician.

COMMONWEALTH BUREAU OF CENSUS AND STATISTICS,
1*st May*, 1911.

INDEX TO SPECIAL ARTICLES, ETC., APPEARING IN PREVIOUS ISSUES.

These articles have appeared in former issues of the Commonwealth Year Book, but, owing to exigencies of space, they are not included in this publication.

NOTE.—The Roman figures indicate the number of the Year Book to which reference refers.

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CORRIGENDA.

Page 189, seventh line, for "46,981" read "46,980."

,, 399, fourth line, for "seven" read "eight"; fifth and seventh lines, for "1908-9" read "1909-10."

,, 412, fourth line, for "1908-9" read "1909-10."

,, 432, heading of table, substitute (*) for (†) for 1906, and (†) for (*) for 1907, 1908, and 1909.

,, 509, first part of table, South Australia, last column, for "114,019" read "5776," and Commonwealth total, for "154,859" read "46,616."

,, 591, tenth line from bottom of page, for "conduct" read "conduit."

,, 703, seventh line from bottom of page, after "at head of page" insert "700."

,, 769, first line, for "1910" read "1911."

,, 808, line before second table, for "1909" read "1910."

,, 814 to 819.—Owing to the fact that the finally adjusted Commonwealth Financial returns for 1909-10 did not come to hand until after the chapter dealing with Commonwealth Finance had been printed off, certain amendments necessary in the tables of classified expenditure could not be effected. The amended figures have consequently been inserted in full on pages 1191-2 of the Appendix hereto.

,, 834, second table, 1908 figures, for "*841,227" read "1,023,629," and for "20,245,485" read "20,427,887"; 1909 figures, for "1,508,783" read "1,508,883," and for "22,732,065" read "22,732,165"; and omit note at foot of table.

,, 897, twelfth line, for "our" read "four."

,, 935, first table, last figure second last column, for "368,978" read "368,678."

,, 968, last line, for "five" read "six."

OFFICIAL STATISTICS.

COMMONWEALTH OF AUSTRALIA YEAR BOOK, 1910,

AND EARLIER YEARS.

SECTION I.

STATISTICAL ORGANISATION AND SOURCES OF INFORMATION.

§ 1. Introduction.

1. **Development of Australian Statistics.**—In the first issue of the Commonwealth Official Year Book (No. 1, 1901-1907), an account was given of the origin and development of the statistical methods of Australia from the earliest times to the organisation of the Commonwealth Bureau of Census and Statistics; *vide* pp. 1 to 16 therein. It will suffice to mention here that statistical compilation in Australia originated in the necessity of producing "Blue Books" for the information of the Home Government. The granting of Responsible Government extended the field of statistics required to be collected, and changed somewhat the administrative arrangements for statistical compilation. Certain branches, for example, were early relegated to the various Registrars-General. Finance was ordinarily dealt with by the Treasuries; Trade, by the Customs Departments; and in general each department prepared statistics for itself. Owing to this, State Statistical Departments came ultimately to be organised largely as collecting agencies of official and general information. The effort of each State, however, was independent. A short historical sketch was given in Year Book No. 1, pp. 2 to 5, showing how each State Bureau, and that of New Zealand, actually developed, and a brief reference was made to the publications issued by the various Bureaux.

Although even from the earliest times the desirableness of uniformity in statistical compilation was recognised, and some effort was also made to bring it about, it was practically inevitable, in the absence of any co-ordinating authority, that divergencies of technique should arise, and that these divergencies should introduce difficulties in the way of so combining State statistics, as to get a satisfactory statistic for Australia as a whole. Individualising tendencies were only very partially combated by the various conferences of State Statisticians, namely, in 1861, 1875, 1890, 1900, 1902, and 1903.

(i.) *Creation of the Commonwealth Bureau of Census and Statistics.* Constitutionally matters relating to "Census and Statistics" belong to the Commonwealth, and in the year 1906 the Commonwealth Bureau of Census and Statistics was created under the authority of the Census and Statistics Act of 1905, the provisions of which were stated *in extenso* in Year Book No. 1, pp. 8 to 11. The Act deals with administration, with the taking of the census, with the collection of statistics generally, and with the obligations of the public to conform to the requirements of the Act itself. Prior to the creation of the Commonwealth Bureau, it was nearly always difficult, and often impossible, to combine the statistics of the several States, because the basis and whole technique of collection were fixed practically without regard to the necessities of compilation for Australia as a whole.

(ii.) *Statistical Conference, 1906.* It became evident that this state of things could no longer continue, and a conference under the presidency of the Commonwealth Statistician, attended by statistical representatives of each State and New Zealand, was held in November and December, 1906, for the purpose of devising a scheme under which statistical collection would become satisfactory for the study of the affairs of the Commonwealth, as well as those of its constituent parts. It was recognised that the statistical organisation should be such as to secure the following advantages, viz.:—

(i.) Identity of categories under which the facts are to be collated.
(ii.) Substantial identity in the method of collection.
(iii.) Uniformity in the scheme of presenting the facts collected.
(iv.) Simultaneity of collection where possible.

An account of the *personnel* of the conference, of the more salient points of the Commonwealth Statistician's address, and a *resumé* of the conference resolutions are given in Year Book No. 1, pp. 13-16. The main features of these resolutions were as follows:—

(i.) In the interests alike of each State and the Commonwealth the collection and compilation of statistical information by the State Statistical Bureaux should be co-extensive, and, within the limits indicated by the adopted forms, uniform in respect of method, order, and date of compilation; and each State Bureau should be equipped so as to make it possible to respond to this demand.

(ii.) Excepting in the case of information confidentially collected, or compilation confidentially made for the State or Commonwealth Governments, the whole of the statistical information in each Statistical Bureau should be immediately available to the Commonwealth or State Statisticians.

(iii.) In order to secure uniformity in the compilation and interpretation of statistical data, a complete scheme of instructions should be drafted by the Commonwealth Statistician for general adoption.

(iv.) The classification of causes of death prepared by the International Institute of Statistics should be adopted.[1]

(v.) A quinquennial enumeration of population is necessary, owing to the rapid movement of population in Australia.

(vi.) A monthly record of Interstate Trade should be furnished.

(vii.) Statistics of production should be so published as never to disclose the operations of individual establishments, and, in general, in order to engender the necessary confidence in the minds of informants as to the strictly impersonal nature of statistical inquiries, and so secure readiness to furnish accurate information, the customary statistical practice of maintaining absolute secrecy should, under no circumstances, be departed from.

---

1. The Commonwealth Statistician translated the necessary nosological classification, and it was published early in 1907.

(viii.) Statistical publications of the Commonwealth and States should, as far as possible, be of uniform sizes, and uniform as to order of subject matter.

(ix.) Trade statistics should be published for each calendar year, classified under categories, and in statistics of export the State of origin should be shewn.

(x.) All questions of mathematical method, mode of determining means, etc., shall be decided for all States by the Commonwealth Statistician.

Effect is gradually being given to these resolutions as opportunity offers. The question of the desirability of continuing, or otherwise, the State Bureaux was left in abeyance with a view to seeing how far satisfactory results could be secured by co-operation.

2. **Sources of Information.**—(i.) *State Statistical Bureaux.* The information supplied by the State Statistical Bureaux is now collected and arranged under a common method, and according to uniform categories. The State Bureaux, therefore, have a double function, viz., they collect—(*a*) for their immediate requirements as States, and (*b*) as integral parts of the Commonwealth. The collections are made—(i.) by the police, (ii.) by special collectors, (iii.) by direct demand for returns, and (iv.) by compilation from official departmental reports.

(ii.) *Commonwealth and State Departments.* All statistical compilations of Commonwealth and State Departments are forwarded as soon as published, and occasionally in manuscript prior to publication, to the "Commonwealth Bureau of Census and Statistics," for the purpose of facilitating official statistical compilation on behalf of the Commonwealth. This matter is more fully referred to in § 2, hereinafter, *q.v.*

(iii.) *Scientific and Technical Experts.* The services of scientific and technical experts are requisitioned where necessary, so that the whole of the information published under the auspices of the Commonwealth will be as authoritative and accurate as it is possible to make it.

(iv.) *Authority conferred on State Statisticians.* Where their Governments have formally entered into the necessary arrangements, the State Statisticians have been duly constituted as officers under the Commonwealth Census and Statistics Act.

(v.) *Supply of Information to the Commonwealth Statistician.* The Census and Statistics Act enacts, under penalty, that when persons are required by the Commonwealth Statistician so to do, they shall furnish him with information in any matters relating to population, vital, social, and industrial affairs; relating to employment and non-employment; to imports and exports, both oversea and interstate; to postal and telegraphic matters; to factories, mines, and any other productive industries, including agricultural, horticultural, viticultural, dairying, and pastoral; to banking, insurance, and finance; to railways, tramways, shipping, and transport generally; to land tenure, and occupancy generally; as well as to any additional matters which may be prescribed by regulation. Apart from rendering returns on the proper form, every person is required to answer all questions asked him by the Statistician or other officer authorised by the Statistician, in regard to any branch of statistics required by the Act to be collected. In order to facilitate inquiries "the Statistician or any officer authorised in writing by him may, at any time during working hours, enter any factory, mine, workshop, or place where persons are employed, and may inspect any part of it, and all plant and machinery used in connection with it, and may make such inquiries as are necessary" for the requisite information, and penalties are prescribed for hindering the Statistician or his authorised officers in the execution of their duty.

3. **Maintenance of Secrecy.**—It is desirable that it should be publicly recognised that accurate information supplied to a statistical office under promise of secrecy can never, under any circumstances, be used against the individual supplying it, and under

no circumstance whatever will the Statistician disclose to any authority the affairs of individuals or of individual businesses, or of small groups of businesses, where, through inference, the affairs of an individual business would be virtually disclosed. In this connection it may be pointed out that the following resolutions of the 1906 Conference of Statisticians have been accepted by the Commonwealth and State Governments, viz.:—

(i.) That in conformity with statistical practice, and for the purpose of engendering the necessary confidence in the minds of informants as to the strictly impersonal nature of statistical inquiries, and of thus securing increased readiness on their part to supply correct information, through which alone statistical accuracy is attainable, it is desirable that the details of the statistics of production should in no case be so published as to reveal the operations of individual establishments.

(ii.) That it is further desirable that information obtained under promise of secrecy, express or implied, should not, under any circumstances, be divulged.

A statistical office is, in respect of the affairs of individuals, and of individual businesses, an office in which absolute secrecy is maintained. Its inquiries are invariably impersonal, and it should be publicly known that no other Government department, as, for example, Customs, Excise, or Taxation either Land or Income, can, under any circumstances whatever, make use of the statistical departments in order to acquire detailed information otherwise unavailable. All persons may therefore feel assured that they may render correct information without regard to any possible ulterior consequences.

4. **Accuracy Essential.**—It is needless to add that it is important that statistical information should be perfectly accurate, and any person who knowingly makes, on any form or document filled up or supplied, or in answer to any question asked him under the authority of the Census and Statistics Act, any statement which is untrue in any material particular, is liable to a penalty of £50. It is regrettable that census and other statistical results contain intrinsic evidence of deliberate misstatements. For example, the statement of age in census papers is often erroneous, probably, amongst other reasons, because it is not recognised that accurate data are essential for the preparation of the valuable tables necessary for forming judgments in various matters, for example, deducing the probability of life for both sexes at each age, or for determining the premium payments which a safe life insurance policy ought to require.

§ 2. Statistical Publications of Australia.

1. **Introductory.**—The official statistical publications of Australia may be divided bibliographically into two main divisions, viz.:—(1) Commonwealth publications dealing both individually and collectively with the several States of the Commonwealth, and (2) State publications dealing with individual States only. Besides these there are a large number of publications issued regularly, which, though not wholly statistical, necessarily contain a considerable amount of statistical information. These are included in the lists given hereunder, which are revised to 30th November, 1910.

2. **Commonwealth Publications.**—Commonwealth publications may be grouped under two heads, viz.:—(i.) Publications issued by the Commonwealth Statistician, and (ii.) Departmental Reports and Papers.

(i.) *Publications issued by the Commonwealth Statistician.* The following is a list of statistical publications issued from the Commonwealth Bureau of Census and Statistics since its inauguration and up to the 30th November, 1910:—

Finance—Bulletin No. 1, 1901 to 1907.
Bulletin No. 2, 1901 to 1908.
Bulletin No. 3, 1901 to 1909.

Population and Vital Statistics—Bulletin No. 1, Determination of the Population of Australia, 1901 to 1906.
Bulletin No. 2, Commonwealth Demography, 1901 to 1906.
Bulletin No. 7, Commonwealth Demography, 1901 to 1907.
Bulletin No. 13, Commonwealth Demography, 1901 to 1908.
Bulletin No. 19, Commonwealth Demography, 1901 to 1909.
Bulletins Nos. 3 to 6, 9 to 12, 15 to 18, 21, and 22, Vital Statistics, issued quarterly, 1907, 1908, 1909, and first and second quarters of 1910.
Bulletin No. 8, Vital Statistics for year 1907.
Bulletin No. 14, Vital Statistics for year 1908.
Bulletin No. 20, Vital Statistics for year 1909.
The Nomenclature of Diseases and of Causes of Death, 1907. New Edition, 1910.

Production—Bulletin No. 1, 1901 to 1906.
Bulletin No. 2, 1901 to 1907.
Bulletin No. 3, 1901 to 1908.

Professional Papers—The Classification of Diseases and Causes of Death, from the standpoint of the Statistician.
Census Taking—C. H. Wickens, A.I.A.
On the Influence of Infantile Mortality on Birthrate (2 papers).
On the Statistical opportunities of the Medical Profession.
Tuberculosis Duration Frequency Curves, and the number of existing cases ultimately fatal.
The Problems of Statistics.
The Evolution and Significance of the Census.

Railway Statistics—Report on the Desirability of Improved Statistics of Government Railways in Australia, February, 1909.

Shipping—Shipping and Oversea Migration for 1906.
Shipping and Oversea Migration for 1907.
Shipping and Oversea Migration for 1908.
Shipping and Oversea Migration for 1909.

Social Insurance—Report to the Hon. the Minister of Trade and Customs.

Superannuation for the Commonwealth Public Service—Report to the Hon. the Minister of Home Affairs.

The Australian Commonwealth—Its Resources and Production, 1908. New Edition, 1910.

Trade and Customs—Trade, Customs, and Excise Revenue for 1906.
Trade, Customs, and Excise Revenue for 1907.
Trade, Customs, and Excise Revenue for 1908.
Trade, Customs, and Excise Revenue for 1909.
Trade, Shipping, and Oversea Migration—Bulletins Nos. 1 to 45, issued monthly, commencing January, 1907.

Transport and Communication—Bulletin No. 1, 1901 to 1906.
Bulletin No. 2, 1901 to 1908.
Bulletin No. 3, 1901 to 1909.

Social Statistics—Bulletin No. 1, 1907.
Bulletin No. 2, 1908.

Year Book of the Commonwealth—No. 1, 1901 to 1907.
No. 2, 1901 to 1908.
No. 3, 1901 to 1909.

(ii.) *Commonwealth Parliamentary and Departmental Reports and Papers.* The following official reports and papers containing statistical matter have been issued since the inauguration of the Commonwealth:—

British New Guinea, Reports for 1904-5 to 1908-9.
Budget, 1901-2 to 1909-10.
Commonwealth Meteorologist. Climate and Meteorology of Australia; Bulletin 1 to 5; Rainfall Maps of Australia; Monthly Meteorological Reports, commencing January 1910.
Contract Immigrants Act 1905 and Immigration Restriction Acts 1901-5; Returns for Years 1902 to 1909.
Director of Naval Forces; Report for 1906.
Electoral Statistics of Commonwealth Elections; 1903, 1906, and 1910.
Estimates; 1901-2 to 1910-11.
Fisheries; Reports of the Director on Fishing Experiments carried out by the F.T.S. "Endeavour."
Handbooks of the Territory of Papua.
Inspector-General of Military Forces; Reports, 1905 to 1907.
Memorandum on Australian Military Defence and its progress since Federation.
Memorandum on the Defence of Australia, by Field-Marshal Lord Kitchener.
Military Board; Reports, 1905 and 1906.
Naturalisation Act 1903; Returns.
Patent Statistics; 1904 to 1910.
Parliamentary Papers (miscellaneous); Reports of Committees, Commissions, Conferences, etc.
Postmaster-General's Department; Statement of Business transacted and details of Receipts and Expenditure, 1907 and 1908.
Public Service Commissioner; Reports, 1901-4, 1905, 1906, and 1907, and Public Service Lists, 1903 to 1910.
Representation Act 1905; Returns.
Trade and Customs Returns, 1903 to 1905; compiled by the New South Wales Government Statistician for the Minister for Customs.
Treasurer's Statements and Reports of Auditor-General, 1901-2 to 1908-9.
Treasury Statements of Receipts and Expenditure, issued quarterly in the *Commonwealth Gazette*.

3. **State Publications.**—The chief statistical publications of each State issued since Federation may be most conveniently grouped under the following heads, viz.:—(*a*) Publications issued by the Government Statist, (*b*) parliamentary and departmental reports and papers, and (*c*) reports and statements of local and public bodies. These are set out hereunder for each State:—

(i.) **New South Wales.**—(*a*) *Publications by Government Statistician:*—

The Wealth and Progress of New South Wales, 1900-1.
The Seven Colonies of Australasia, 1901-2.
A Statistical Account of Australia and New Zealand, 1902-3, 1903-4.
The Official Year Book of New South Wales, 1904-5, 1905-6, 1907-8, 1908-9.
Six States of Australia and New Zealand (annual statistics), 1901 to 1905.
Monthly Statistical Bulletin, 1905 to October 1910.
Statistical Registers, 1901 to 1908, and 1909 (parts).
Census of New South Wales, 1901.
Vital Statistics, 1901 to 1909.
Agricultural and Live-stock Statistics, 1901 to 1910.
Statistical View of the Progress of New South Wales during 50 years, 1856 to 1906.
Friendly Societies' Experience, New South Wales, 1900-1908.
Comparative Legislation relating to the Industrial Classes.

(*b*) *Departmental Papers*:—

Annual Reports of—

Australian Museum
Board of Public Health
Chief Medical Officer
Commissioner of Railways
Comptroller-General of Prisons
Director of Botanical Gardens and Domains
Department of Agriculture
Department of Crown Lands
Department of Mines and Agriculture
Department of Police
Department of Public Works
Fisheries Board
Forestries Branch
Government Savings Bank
Inspector-General of Insane
Inspector under Factories and Shops Acts.
Labour Commissioners
Leprosy Board
Minister of Public Instruction
National Art Gallery
Pharmacy Board
Public Library
Public Service Board
Registrar of Friendly Societies, Building Societies, and Trade Unions
Registrar-General
State Children's Relief Board
Superintendent of Carpenterian Reformat'ry
University of Sydney
Western Land Board.

The Estimates.

Parliamentary Papers (miscellaneous); Reports of Committees, Commissions, Conferences, etc.

Public Accounts and Report of the Auditor-General.

(*c*) *Reports and Statements of Local Bodies*:—

Annual Statements of Municipalities
Fire Brigades Board
Hospitals
Hunter District Water Supply and Sewerage Board
Metropolitan Board of Water Supply and Sewerage
Sydney Harbour Trust
Town Clerk of the City of Sydney.

(ii.) **Victoria.**—(*a*) *Publications by the Government Statist*:—

Statistical Registers, 1901 to 1908, and 1909 (parts).
The Victorian Year Books, 1902 to 1908-9, and 1909-10 (parts).
Quarterly Statistical Abstracts, 1904 to 30th June, 1910.
Quarterly Returns of Vital Statistics, 1901 to 30th September, 1910.
Monthly Returns of Oversea Imports and Exports, 1901 to May, 1910.
Statistics of Manufactories, Works, etc., 1901 to 1909.
Agricultural Statistics, 1900-1 to 1909-10.
Australasian Statistics, 1901-2, with Summaries for Previous Years.
The First Fifty Years of Responsible Government in Victoria, 1856 to 1906.
Census of Victoria, 1901.

(*b*) *Departmental Papers*:—

Accounts of the Trustees of Agricultural Colleges and the Council of Agricultural Education.

Annual Reports of—

Actuary for Friendly Societies on Trade Unions
Board for the Protection of Aborigines
Board of Public Health
Chief Inspector of Explosives
Commissioner of Crown Lands and Survey
Conservator of Forests
Council of Judges
Department of Agriculture
Government Astronomer
Inspector of Charitable Institutions
Inspector of Factories, Workrooms and Shops
Inspector-General of the Insane
Inspector of Neglected Children and Reformatory Schools
Inspector-General of Penal Establishments and Gaols
Inspector-General of Savings Banks
Lands Purchase and Management Board
Licenses Reduction Board
Marine Board of Victoria
Minister of Public Instruction

Public Service Commissioner
Registrar of Friendly Societies
Railway Commissioners
Secretary for Mines
State Rivers and Water Supply Commission
Trustees of the Public Library, Museums, and National Gallery
Vice-Chancellor of Melbourne University.

The Budget.
Returns under the Banks and Currency Act 1890, the Companies Act 1890, and the Electric Light and Power Act 1896.
Parliamentary Papers (miscellaneous); Reports of Committees, Commissions, Conferences, etc.
Statement of Expenditure under the Constitution Statute.
The Estimates.
Treasurer's Statement and Report of the Auditor-General.

(*c*) *Reports of Local Bodies*:—

Annual Reports of the Melbourne Harbour Trust Commission
Annual Reports of the Fire Brigades Board
Annual Statements of Municipal and Shire Councils
Geelong Municipal Waterworks Trust
Hospitals
Statement of Accounts of the Melbourne and Metropolitan Board of Works.

(iii.) **Queensland.**—(*a*) *Publications by Government Statistician and Registrar-General*:—

The Queensland Official Year Book, 1901.
The Census of 1901.
A.B.C. of Queensland Statistics, 1905 to 1910.
Vital Statistics, 1901 to 1909.
Statistical Registers, 1901 to 1909.
Stock List, 1901 to 1909.
Reports on Agricultural and Pastoral Statistics, on Vital Statistics, on the Sugar Crops, on the Wheat Crop, and on Live Stock.

(*b*) *Departmental Papers*:—

Annual Reports of the—

Agent-General
Auditor-General under the Supreme Court Funds Act 1895
Auditor-General under the Queensland National Bank Act 1896
Benevolent Asylums
Brisbane Board of Waterworks
Bureau of Sugar Experiment Stations
Chief Protector of Aboriginals
Chief Inspector of Factories and Shops
Chief Inspector of Machinery & Scaffolding
Commissioner for Public Health
Commissioner of Income Tax
Commissioner of Police
Commissioner for Railways
Comptroller-General of Prisons
Curator of Intestate Estates
Department of Agriculture and Stock
Department of Public Lands
Department of Public Works
Director of Forests
Director of Labour
Engineer for Harbours and Rivers
Govt. Life Insurance and Annuity Business
Hydraulic Engineer on Water Supply
Immigration Agent
Inspector of Hospitals for the Insane
Inspector of Orphanages
Manager of the Government Savings Bank
Marine Department
Medical Officers of Hospitals
Officer in Charge, Government Relief
Official Trustees in Insolvency
Pacific Island Immigration
Parliamentary Committees
Police Investment Board
Public Service Board
Registrar of Friendly Societies, Building Societies, and Trade Unions
Registrar of Friendly Societies and Official Valuer on the Quinquennial Valuation of Friendly Societies
Secretary for Public Instruction
Trustees of the Agricultural Bank
Trustees of the National Art Gallery
Trustees of the Public Library
Under-Secretary for Mines.

Blue Book.
The Estimates.
Parliamentary Papers (miscellaneous); Reports of Committees, Commissions, Conferences, etc.
Reports of the Auditor-General.
Treasurer's Financial Statement.

(*c*) *Reports and Statements of Local Bodies*:—

Brisbane Board of Waterworks.
Bundaberg Harbour Board.
Engineer for Harbours and Rivers.
Hospitals.

(iv.) **South Australia.**—(*a*) *Publications by the Under-Secretary and Government Statist*:—

Statistical Registers, 1901 to 1908, and 1909 (parts).
Monthly Returns of Births and Deaths, 1901 to September, 1910.
Monthly Returns of Vital Statistics, 1901 to June, 1910.
The Census of 1901.
Annual Reports on Agricultural and Live-stock Statistics.
Blue Book.
Statistical Summary of South Australia from its foundation, 1836 to 1908.

(*b*) *Departmental Papers*:—

Annual Reports of the—

Actuary on Friendly Societies (1900-1904(
Agent-General
Audit-Commissioner
Chief Inspector of Stock
Commissioner of Police
Commissioner of Railways
Commissioners of the National Park
Conservator of Forests
Department of Agriculture
Department of Public Works
Destitute Board
Gaols and Prisons
Government Astronomer
Government Resident of Northern Territory
Governors of the Public Library, Museum, and Art Gallery
Hospital for the Insane
Inspector of Factories
Inspector of Fisheries
Marine Board
Minister for Education
Public Service Superannuation Board
Registrar of Births, Deaths, and Marriages
State Children's Council
Surveyor-General
Trustees of the Savings Bank.

Parliamentary Papers (miscellaneous); Reports of Committees, Commissions, Conferences, etc.
The Estimates.
Financial Statement of the Treasurer.
Mining Operations; Half-Yearly Reviews, 1904 to 1909.

(*c*) *Reports and Statements of Local Bodies*:—

Reports of Hospitals.
Schools of Mines and Industries.
Fire Brigades Boards.
Port Adelaide Corporation.

(v.) **Western Australia.**—(*a*) *Publications by Government Statistician :—*

The Census of 1901.
Statistical Registers, 1901 to 1908 and 1909 (parts).
Monthly Statistical Abstracts, 1901 to September, 1910.
Year Books of Western Australia, 1900-03, 1902-4, 1905 (part).
Quarterly and Annual Reports on Population and Vital Statistics.
Crop and Live Stock Returns.
Blue Book.
Statistical View of 81 years' progress in Western Australia, 1829 to 1909.

(*b*) *Departmental Papers :—*

Annual Reports of the—

Aborigines Department
Agent-General
Agricultural Bank
Art Galleries
Chief Inspector of Explosives
Chief Inspector of Factories
Chief Inspector of Fisheries
Commissioner of Police
Commissioner of Railways
Commissioner of Taxation
Comptroller-General of Prisons
Customs Collector and Registrar of Shipping
Department of Agriculture
Department of Lands and Surveys
Department of Mines
Department of Public Health
Department of Public Works
Department of Woods and Forests
Education Department
Geological Survey
Government Analyst
Government Astronomer
Government Labour Bureau
Government Savings Bank
Harbour and Light Department
Inspector-General of Insane
Lands Titles Department
Museum and Art Gallery
Principal Medical Officer on the Medical, Health, and Factories Departments
Public Library
Public Service Commissioner
Registrar of Friendly Societies
Registrar of Friendly Societies in connection with Trade Unions
Stock Department
Superintendent of Charities and Inspector of Industrial and Reformatory Schools
Surveyor-General
The Industrial Conciliation and Arbitration Act 1902, by Registrar of Friendly Societies.

Parliamentary Papers (miscellaneous) ; Reports of Committees, Commissions, Conferences, etc.
The Estimates.
Public Accounts and Report of the Auditor-General.
Bulletins of the Department of State Medicine and Public Health.

(*c*) *Reports and Statements of Local Bodies :—*

Cemetery Boards
Fire Brigades
Fremantle Harbour Trust Commissioners
Fremantle Municipal Tramways and Electric Lighting Board
Metropolitan Waterworks Board
Municipalities, Road Boards, and Boards of Health
Public Hospitals
Waterworks Boards (country).

(vi.) **Tasmania.** (*a*) *Publications by Government Statistician and Registrar-General :—*

The Census of 1901.
Statistical Registers, 1901 to 1908-9 and 1909-10 (parts).
Reports on Vital Statistics and Migration, 1901 to 1910.
Reports on Agricultural and Live Stock Statistics, 1901 to 1909-10.
Statistical Summaries, 1901 to 1907.

(*b*) *Departmental Papers :—*

Annual Reports of the—

Agent-General
Charitable Grants Department
Chief Inspector of Stock
Commissioner of Taxes
Department of Agriculture
Department of Education
Department of Mines
Department of Neglected Children
Department of Public Health
Engineer-in-Chief of Public Works
Explosives Department
Fire Brigade Board
General Manager of Government Railways
Hobart and Launceston Gaols
Inspector of Machinery
Lands and Survey Department
Museum and Botanical Gardens
Police Department
Public Library
Public Service Board
Recorder of Titles
Registrar of Friendly Societies and Trade Unions
Savings Bank
Secretary for Mines
University of Tasmania.

The Budget.
The Estimates—Finance 1906-7.
Parliamentary Papers (miscellaneous) ; Reports of Committees, Commissions, Conferences, etc.
Public Debts Sinking Fund.
Report of the Auditor-General.
Financial Statement of the Treasurer.

(*c*) *Reports and Statements of Local Bodies :—*

Country Libraries
Harbour Trusts
Hobart Drainage Board
Hospitals
Industrial Schools
Life Assurance Societies
Marine Boards
Municipalities.

SECTION II.

DISCOVERY, COLONISATION, AND FEDERATION OF AUSTRALIA.

§ 1. Early Knowledge of Australia.

1. **Introduction.**—It is proposed to give here only a brief summary of the more important facts relating to the early history of Australian discovery. A more complete account of this subject, together with bibliographical references thereto, may be found in Year Book No. 1 (pp. 44 to 51).

2. **Early Tradition.**—It would appear that there was an early Chaldean tradition as to the existence of an Austral land to the south of India. Rumours to that effect in course of time found their way to Europe, and were probably spread by voyagers from Indian seas, more especially by the Greek soldiers who accompanied Alexander the Great [B.C. 356-323] to India. References to this *Terra Australis* are found in the works of Ælianus [A.D. 205-234], Manilius [probably a contemporary of Augustus or Tiberius Cæsar], and Ptolemy [A.D. 107-161]. The precise period at which Australia was first discovered by Europeans is not known. In some of the maps of the first period of the Middle Ages there is evidence which might warrant the supposition of the knowledge of the existence of a *Terra Australis*, while a less indefinite idea of the Austral land appears in the maps and manuscripts of the fourteenth and fifteenth centuries.

3. **Discovery of Australia.**—The Venetian traveller, Marco Polo [1254-1324], and Nicolo de' Conti [*circa* 1440], refer to a land called *Java Major*, which there is little doubt was Australia. On the Mappamundi in the British Museum, of not later date than 1489, there is a coast-line which can be none other than the west coast of Australia. Martin Behaim's globe, the oldest known globe extant, constructed in 1492, also shews part of Australia's coast-line, and a wooden globe in Paris bears an inscription to the effect that the *Terra Australis* was discovered in 1499. It is possible, however, that this term was also applied to the regions now known as Terra del Fuego, so that but little weight can be attached to this reference.

Collingridge states that the French navigator DeGonneville who was supposed to have landed on the shores of Western Australia in 1503 never reached there.

In the Dauphin map [about 1530-1536] Australia is referred to as *Jave la Grande*.

(i.) *Arab Expeditions.* It is stated that the Arabs had come to Australia long before the Portuguese, the Spanish, or the Dutch, and that remnants of their visits in the shape of funeral monuments have been discovered in Western Australia. The continent figures also on their primitive 13th century maps, and the Portuguese are alleged to have utilised the information contained in such maps.

(ii.) *Spanish and Portuguese Expeditions.* The last decade of the fifteenth century and the commencement of the sixteenth saw numerous expeditions equipped in the ports of Spain and Portugal for the purpose of exploiting the new world. The Portuguese

rounded the southernmost Cape of Africa, which became known as the Cape of Good Hope, and pushed eastward. The Spaniards, relying on the scientific conclusion that the world was spherical, attempted to get to the east by deliberately starting out west, Magalhaens by so doing reaching the Philippine Islands in 1521. It would appear, however, that for some reason all definite information regarding the *Terra Australis* was suppressed.

It may be mentioned that in 1606, de Quiros, on reaching the island that has retained the name of Espiritu Santo (the largest island of the New Hebrides group) thought that he had come to this great land of the South, and therefore named the group *La Austrialia del Espiritu Santo*. De Torres, who was with him, passed through the straits which now bear his name, and proceeded to the Philippine Islands, thus marking the close of Spanish activity in the work of Australian discovery.

The claims to discovery urged on behalf of the Portuguese Godinho de Eredia in 1601 are rejected by Collingridge, who states that they were based on a spurious chart.

(iii.) *Discoveries by the Dutch.* With the decline of Portuguese and Spanish naval supremacy came the opportunity of the Dutch for discovery. It must not be forgotten however, that the Dutch were very prone to adopt Portuguese and Spanish charts, which when altered, made it appear as if the Dutch were the actual discoverers. Cornelius Wytfliet's map, of which there was an English edition, published at Louvain in 1597, and which indicates roughly the eastern and western coasts of Australia, as well as the Gulf of Carpentaria, was taken from a Portuguese or Spanish source. The following often quoted passage, which occurs in Wytfliet's "*Descriptionis Ptolemaicae Augmentum*," is therefore simply a translation of some Portuguese or Spanish text. "The *Australis Terra* is the most southern of all lands. It is separated from New Guinea by a narrow strait. Its shores are hitherto but little known, since, after one voyage and another, that route has been deserted and seldom is the country visited, unless when sailors are driven there by storms. The *Australis Terra* begins at one or two degrees from the equator, and is maintained by some to be so great an extent that, if it were thoroughly explored, it would be regarded as a fifth part of the world."

The Dutch East India Company, in 1605, sent the *Duyfken* from Bantam to explore the Islands of New Guinea. During March in the following year the *Duyfken* coasted along the southern shores of New Guinea but never penetrated into the Gulf of Carpentaria as is generally supposed. Dirck Hartog, in the *Eendracht* in 1616, sailed along a considerable part of the west coast.

In 1618, a Dutch vessel called the *Mauritius* touched near the North-West Cape, and discovered the *Willems Rivier* (probably the Ashburton) in lat. 21° 45′ S., and in the following year a fleet of eleven vessels, under the command of Frederik Houtman, in the *Dordrecht*, discovered the reef off the west coast, now known as *Houtman's Abrolhos*.

In 1622 the Dutch vessel *Leeuwin* rounded the Cape at the south-west of the continent which now bears that name, and in 1623 the Dutch vessels *Pera* and *Arnhem* discovered Arnhem Land, the peninsula on the western side of the Gulf of Carpentaria, which was so named in compliment to Peter Carpenter, Governor to the Dutch East India Company.

In 1627, Francis Thysz, commander of the *Gulde Zeepaerd*, with Pieter Nuyts of the Dutch Council of Seventeen, on board, was driven out of his course along a portion of the shore of the Great Australian Bight. In 1628, De Witt, commander of the *Vianen*, discovered land on the north-west, viz., in about latitude 21° S. The *Batavia*, commanded by Francis Pelsart, was wrecked on the western coast of Australia in 1629. Pelsart was the first to carry to Europe an authentic account of the west coast of Australia, which, however, he described in the most unfavourable terms. Gerrit Pool, commanding the yachts *Amsterdam* and *Wesel*, visited the Gulf of Carpentaria in 1636.

Abel Janszoon Tasman, in command of two vessels, the *Heemskirk* and *Zeehaen*, set out in 1642 to ascertain the extent of the great southern continent. He named Van Diemen's Land, imagining it to be part of Australia proper, and sailing north-easterly discovered New Zealand. In his second voyage in 1644, Tasman visited the northern

coasts of Australia, but made no discoveries of importance. The period of Dutch discoveries may be said to have ended with Tasman's second voyage, and, with the decline of Dutch maritime power, their interest in Australian discovery vanished. It may, however, be pointed out that William de Vlamingh landed at the mouth of the Swan River at the end of 1696, and in 1705 a Dutch exploring squadron under Martin van Delft visited and named parts of the north-west coast of Australia.

4. **Discoveries by the English.**—English enterprise was early shewn, viz., by Sir William Courteen petitioning James I., in 1624, for the privilege of erecting colonies in the *Terra Australis*, a petition which probably was not granted. The north-western shores of Australia were first visited by William Dampier, in the *Cygnet*, in 1688. In describing the country Dampier stated that he was certain that it joined neither Asia, Africa, nor America. In 1699 he again visited Australia, in command of H.M.S. *Roebuck*, and on his return to England published an account in which a description is given of trees, flowers, birds, and reptiles observed, and of encounters with natives.

It was a question at the end of the seventeenth century whether Tasmania and New Zealand were parts of Australia, or whether they were separated from it, but themselves formed part of a great Antarctic Continent. Lieutenant James Cook's first voyage, though primarily undertaken for the purpose of observing the transit of Venus from Otaheite, had also for its objective to ascertain whether the unexplored part of the southern hemisphere be only an immense mass of water or contain another continent. In command of H.M.S. *Endeavour*, a barque of 370 tons burthen, carrying about eighty-five persons, and accompanied by Sir Joseph Banks, Dr. Solander the naturalist, Green the astronomer, draughtsmen, and servants, Cook, after observing the transit of Venus at Otaheite, turned towards New Zealand, sighting that land on the 8th October, 1769,[1] in the neighbourhood of Poverty Bay. Circumnavigating the North and South Islands, he proved that New Zealand was connected neither with the supposed Antarctic continent nor with Australia, and took formal possession thereof in the name of the British Crown. On the 20th April, 1770,[1] at 6 a.m., Cook sighted the Australian mainland at a place he called Point Hicks, naming it after his first-lieutenant, who first saw it. Coasting northwards, Botany Bay was discovered on the 29th April, 1770.[1] The *Endeavour* dropped anchor, and Cook landed on the following day. On the 2nd May, 1770,[1] a seaman named Sutherland died and was taken ashore to be buried; he was probably the first British subject buried on Australian soil. Cook sailed along the coast in a northerly direction for nearly 1600 miles, until the 12th June, 1770,[1] when the *Endeavour* was seriously damaged by striking a coral reef in the vicinity of Trinity Bay. Repairs occupied nearly two months, and the *Endeavour* then again set her course to the north, sailing through Torres Straits and anchoring in the Downs on the 14th June, 1771.[1] In 1772 Cook was put in command of the ships *Resolution* and *Adventure*, with a view of ascertaining whether a great southern continent existed, and having satisfied himself that, even if it did, it lay so far to the south as to be useless for trade and settlement, he returned to England in 1774. Cook's last voyage was undertaken in 1776, and he met his death on the 14th February, 1779, by which date practically the whole coast of Australia had been explored. The only remaining discovery of importance to be made

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1. *Correct dates* of Lieutenant Cook's Log. After the 180° meridian of longitude had been passed, and owing to no allowance having been made for westing, the various log-books of this voyage are in error one day as to dates. Thus those in Lieut. Cook's private log, in his official log, in Gunner Forwood's, Pickersgill's, Clerke's, Wilkinson's, and Bootie's Journals, in the Palliser copy of Cook's log, and in Wharton's publication, all need correction by adding one day to the date given: that is the 19th should read the 20th, etc. The anonymous log, doubtless Green's, is erroneously supposed by the author of the "Historical Records of New South Wales" to have been corrected for westing, see the foot-note on page 269 therein. The facts are as follows:—What was known as "*ship time*" began a day earlier than under the present system of astronomical reckoning, that is to say, Jan. 1 began at noon Dec. 31. The "*astronomical day*," however, was a whole day later than the *ship's day*: thus what would be assigned to the 24th in Cook's Journal would appear in Green's Journal as the 23rd. (See "Captain Cook's Journal," 1768-71, by Captain W. J. L. Wharton, R.N., F.R.S., London, 1893, preface pp. xii., xiii.) There can be no doubt as to the need of the correction in the dates, since on reaching Batavia the log reads:—"Wednesday 10th, according to our reckoning, but by the people here Thursday 11th." (Op. Cit., pp. 352-3.) Attention was drawn to this matter by Mr. P. de Jersey Grut in the "Argus," Melbourne, May 15, 18 and 22, 1907.

was the existence of a channel between Tasmania and Australia. This was discovered by Flinders and Bass in 1798.

The most complete examination of the early history of discovery in the region of Australia is the "Critical, Documentary, and Historical Investigation concerning the Priority of Discovery in Australasia by Europeans before the Arrival of Lieut. James Cook in the *Endeavour* in the year 1770," by George Collingridge, Esquire. 4to, pp. 376, +xv. Sydney, 1895.

§ 2. The Taking Possession of Australia.

1. **Annexation of Eastern Part of Australia, 1770.**—Although representatives of the nations mentioned in the previous section, landed, or claim to have landed on the shores of Australia on various occasions during the sixteenth and seventeenth centuries, it was not until the 23rd August, 1770, that the history of Australia was brought into definite political connection with western civilisation. It was on that date that Captain Cook took possession "of the whole eastern coast, from lat. 38° to this place, lat. 10½° S., in right of His Majesty King George the Third." Cook, however, proclaimed British sovereignty only over what are now the eastern parts of New South Wales and Queensland, and formal possession, on behalf of the British Crown, of the whole of the eastern part of the Australian Continent and Tasmania was not taken until the 26th January, 1788. It was on this last date that Captain Phillip's commission, first issued to him on the 12th October, 1786, and amplified on the 2nd April, 1787, was read to the people whom he had brought with him in the "First Fleet."

A full historical account of the period referred to may be found in the "Historical Records of New South Wales," vol. I., parts 1 and 2.

2. **Original Extent of New South Wales.**—The commission appointed Phillip "Captain-General and Governor-in-Chief in and over our territory called New South Wales, extending from the Northern Cape or extremity of the coast called Cape York, in the latitude of ten degrees thirty-seven minutes south, to the southern extremity of the said territory of New South Wales or South Cape, in the latitude of forty-three degrees thirty-nine minutes south, and of all the country inland westward as far as the one hundred and thirty-fifth degree of east longitude reckoning from the meridian of Greenwich, including all the islands adjacent in the Pacific Ocean within the latitudes aforesaid of ten degrees thirty-seven minutes south and forty-three degrees thirty-nine minutes south."

Although in November, 1769, Captain Cook had taken possession of the North Island of New Zealand, and in January, 1770, also of the South Island, it is a matter of doubt whether, at the time when Captain Phillip's commission was drawn up, New Zealand was considered as one of the "islands adjacent in the Pacific Ocean." The facts that under the Supreme Court Act (Imperial) of 1823 British residents in New Zealand were brought under the jurisdiction of the court at Sydney, while in 1839 there was a proposal on the part of the British Government to appoint a Consul in New Zealand, would leave this an open question, as nothing more than extra-territorial jurisdiction may have been intended. Various hoistings of flags notwithstanding, New Zealand does not appear to have unequivocally become British territory until 1840. In that year, on the 29th January, Captain Hobson arrived at the Bay of Islands. On the following day he read the commission, which extended the boundaries of the colony of New South Wales so as to embrace and comprehend the Islands of New Zealand. On the 5th February the Treaty of Waitangi, made with the native chiefs, was signed. Finally, on the 21st May, British sovereignty over the Islands of New Zealand was explicitly proclaimed. From that date until the 3rd May, 1841, New Zealand was indubitably a dependency of New South Wales.

3. **Annexation of Western Australia, 1829.**—In June, 1825, Lieut.-General Sir R. Darling, then Governor of New South Wales, sent Major Lockyer, with a party numbering about 75, to found a settlement at King George III. Sound. The expedition sailed from Sydney on the 9th November, 1826, and landed at the Sound on the 26th December following and hoisted the British flag. The settlement was at first governed from Sydney, but on the 7th March, 1831, it was removed to the Swan River Settlement, and the convict portion of the population removed to Van Diemen's Land. In 1826 Captain James Stirling was sent in H.M.S. *Success* on special service in connection with the removal of the penal settlement from Melville Island, and was authorised to explore part of Western Australia. A party from this vessel explored the Swan River on the 8th March, and King George's Sound was reached on the 2nd April. In consequence of the favourable report made by Captain Stirling, the Imperial Government decided to establish a colony at Swan River. Captain Stirling was accordingly despatched as Lieutenant-Governor with a party of intending settlers in the *Parmelia*, and in the following month H.M.S. *Challenger*, under Captain Fremantle, was sent off from the Cape of Good Hope. On the 2nd May, 1829, Captain Fremantle hoisted the British flag on the south head of the Swan River, and took possession of "all that part of New Holland which is not included within the territory of New South Wales," and in the following month the *Parmelia* arrived off Garden Island. Thus, before the middle of 1829 the whole territory, now known as the Commonwealth of Australia, had been constituted a dependency of the United Kingdom.

For a fuller account of the discovery and annexation of Western Australia reference may be made to the Western Australian Year Book, 1905. Part I.

§ 3. The Creation of the Several Colonies.

1. **New South Wales as Original Colony.**—From what has been said, the mainland of Australia was, in Governor Phillip's commission of 1786, originally as shewn on map No. 1, that is, it was divided by the 135th meridian of east longitude into two parts. The earliest colonists believed that Van Diemen's Land—the present State of Tasmania —was actually joined to the mainland, and it was not till 1798 that the contrary was known. In that year, by sailing through Bass Straits, Flinders proved that it was an island. The territory of New South Wales, as originally constituted, and of New Zealand, which may be included, although Cook's annexation was not properly given effect to until 1840, was thus :

	Square Miles.
Australia, east of 135° longitude east	1,454,312
Van Diemen's Land	26,215
New Zealand	104,471
Total	1,584,998

The western part of Australia, not then annexed, comprised originally 1,494,054 square miles.

2. **Separation of Van Diemen's Land, 1825.**—In 1825, Van Diemen's Land, as Tasmania was then called, was politically separated from New South Wales, being constituted a separate colony on the 14th June of that year. This reduced the area of New South Wales and its territorial dependencies by 26,215 square miles, that is, to 1,558,783 square miles.

3. **Extension of New South Wales Westward, 1827.**—In 1827 the western or inland boundary of New South Wales was extended westward to the 129th meridian,[1] thus

1. See "The Annotated Constitution of the Australian Commonwealth," by Quick and Garran, 1901, page 35.


MAP No. 1.
Australasia
from
1786—1827.
INDIAN OCEAN.
PACIFIC OCEAN.
(Not annexed).
1,494,054 sq. m.
135° E.
NEW SOUTH WALES.
(1786).
1,454,312 sq. m.
Eastern Part, undefined westward, annexed by Captain Cook 1770.
Total Area (shaded) 1,584,998. sq. m.
NEW ZEALAND.
104,471 sq. m.
VAN DIEMEN'S LAND.
(till 1853).
26,215 sq. m.
(Separation 1825).
MAP No. 2.
Australasia
from
1827—1836.
WESTERN AUSTRALIA.
(1829).
975,920 sq. m.
129° E. (1827).
NEW SOUTH WALES.
135° E. (1787).
1,972,446 sq. m.
NEW ZEALAND.
104,471 sq. m.
VAN DIEMEN'S LAND.
(1825).
26,215 sq. m.
MAP No. 3.
Australasia
from
1836—1851.
129° E.
NEW SOUTH WALES
(NORTHERN AUSTRALIA, JAN. TO APRIL, 1847)
26° S.
WESTERN AUSTRALIA.
(1829).
975,920 sq. m.
SOUTH AUSTRALIA
(1836).
309,850 sq. m.
132° E.
1,662,596 sq. m.
141° E.
NEW ZEALAND.
(proclaimed 1840).
Separate Colony 1841.
104,471 sq. m.
VAN DIEMEN'S LAND.
(1825).
26,215 sq. m.
In Map No. 3 "Northern Australia" embraced only the area above the dotted line.


MAP No. 4.
Australasia
1851—1859
INDIAN OCEAN.
PACIFIC OCEAN.
NEW SOUTH WALES
WESTERN AUSTRALIA (1829).
975,920 sq. m.
SOUTH AUSTRALIA (1836)
309,850 sq. m.
1,574,712 sq. m.
Perth
Albany
Adelaide
Sydney
VICTORIA
87,884 sq. m.
Melbourne
Launceston
TASMANIA (1825).
26,215 sq. m.
Hobart
Called Tasmania from 1853.
NEW ZEALAND. (proclaimed 1840). Separate Colony 1841.
104,471 sq. m.
Auckland
Wellington
Christchurch
Dunedin
MAP No. 5.
Australasia
1859—1861.
INDIAN OCEAN.
PACIFIC OCEAN.
Townsville
N.S.W.
710,040 sq. m.
QLD
(1859).
Rockhampton
554,300 sq. m.
WESTERN AUSTRALIA (1829).
975,920 sq. m.
SOUTH AUSTRALIA (1836).
309,850 sq. m.
29° S.
Brisbane
Total N.S.W.
1,020,412 sq. m.
NEW SOUTH WALES.
310,372 sq. m.
Perth
Albany
Adelaide
Sydney
VICTORIA (1851).
87,884 sq. m.
Melbourne
Launceston
TASMANIA (1825)
26,215 sq. m.
Hobart
NEW ZEALAND.
104,471 sq. m.
Auckland
Wellington
Christchurch
Dunedin
MAP No. 6.
Australasia
since
1861.
INDIAN OCEAN.
PACIFIC OCEAN.
Palmerston
NORTHERN TERRITORY (1863).
523,620 sq. m.
Townsville
QUEENSLAND (1861).
Rockhampton
WESTERN AUSTRALIA (1829).
975,920 sq. m.
670,500 sq. m.
SOUTH AUSTRALIA (1861).
380,070 sq. m.
Brisbane
Perth
Albany
Adelaide
NEW SOUTH WALES.
310,372 sq. m.
Sydney
VICTORIA (1851).
87,884 sq. m.
Melbourne
Launceston
TASMANIA (1825).
26,215 sq. m.
Hobart
NEW ZEALAND.
104,471 sq. m.
Auckland
Wellington
Christchurch
Dunedin

increasing its area by 518,134 square miles, and making it, including New Zealand and excluding Tasmania, 2,076,917 square miles, or excluding also New Zealand, 1,972,446 square miles.

4. **Western Australia constituted a Colony, 1829.**—The territory annexed by Captain Fremantle in 1829, viz., "all that part of New Holland which is not included within the territory of New South Wales," extended eastward to the 129th meridian, and comprised 975,920 square miles. The constitution of this area into the Colony of Western Australia, now one of the six States of the Commonwealth, was the consequence of Fremantle's Act. By it the annexation of the whole of the Continent of Australia by the British Crown was completed. The Australian colonies at this time were as indicated in the following table, and illustrated by map No. 2:—

Colony.	Date of Annexation.	Date of Creation.	Date of First Permanent Settlement.	Area. Square Miles.
New South Wales (including New Zealand)	1770	1786	1788	2,076,917
Van Diemen's Land ...		1825	1803	26,215
Western Australia	1829	1829	1829	975,920

5. **Creation of South Australia as a Province, 1836.**—On the 15th August, 1834, the Act 4 and 5 William IV., cap. 95, was passed, creating South Australia a "province," and towards the end of the year 1836 settlement took place. The first governor, Captain Hindmarsh, R.N., arrived at Holdfast Bay on the 28th December, 1836, and on the same day the new colony was officially proclaimed. The new colony embraced 309,850 square miles of territory, which, lying south of the 26th parallel of south latitude, and between the 141st and 132nd meridians of east longitude, was up to that time included within the territory of New South Wales, as will be seen on reference to map No. 3. Thus the area of New South Wales and New Zealand was reduced to 1,767,067 square miles.

6. **Separation of New Zealand, 1840.**—New Zealand, nominally annexed by Captain Cook and formally declared by proclamation in 1840 as a dependency of New South Wales, was, by letters patent of the 16th November of that year, constituted a separate colony under the powers of the Act 3 and 4 Vic., cap. 62, of the 7th August, 1840. Proclamation of the separation was made on the 3rd May, 1841. The area of the colony is 104,471 square miles, and its position in reference to Australia is shewn on map No. 4. This separation reduced the political territory of New South Wales to 1,662,596 square miles. See map No. 3.

7. **The Colony of Northern Australia, 1847.**[1]—In the year 1846, at the time when the British Government had begun to feel nonplussed by the question of the transportation of convicts, an attempt was made by Mr. Gladstone, then Colonial Secretary, to establish a purely penal colony, without free settlers (at least at the outset), to be called Northern Australia. This colony did not succeed in securing a permanent place on the map, though its intended metropolis was successfully established and still bears Mr. Gladstone's name. The new colony comprised such of the territories of the colony of New South Wales as lay to the northward of latitude 26° S. Sir Charles Fitzroy, then Governor of New South Wales, was by letters patent appointed Governor of Northern Australia, the actual administration being left in the hands of a Superintendent, who was to be implicitly guided by instructions from the Governor. At the same time Northern Australia was constituted a perfectly distinct colony under a distinct Government, although the authority which the Secretary of State for the Colonies would other-

1. See "The Gladstone Colony," J. F. Hogan, M.P., T. Fisher Unwin, London; 1898.

wise exercise had been deputed in the first instance to the Governor of New South Wales. In the *London Gazette* of the 8th May, 1846, Colonel Barney, R.E., was appointed Lietenant-Governor of Northern Australia, and on the 25th January, 1847, he reached Port Curtis, accompanied by other public officers of the new colony. On the 30th January the ceremony of swearing in the officials of Northern Australia was proceeded with, and on the same day the first *Government Gazette* of the new colony was issued in manuscript. This gazette contained a formal proclamation to the effect that all the land lying to the north of latitude 26° S. should thereafter be known as Northern Australia, and specified the names of the members of the Executive and Legislative Councils of the new colony. The headquarters of the Superintendent and other officials was established at Gladstone, though no other steps appear to have been taken towards securing a permanent settlement. In July, 1846, when Earl Grey succeeded Mr. Gladstone as Secretary of State for the Colonies, one of his first official steps was the complete reversal of the policy of his predecessor with respect to the founding of the new colony of Northern Australia, and by a despatch dated the 15th November, 1846, Sir Charles Fitzroy was informed that the letters patent under which the new colony was constituted had been revoked. This news was received at Gladstone on the 15th April, 1847, and on the 9th May following the settlement was broken up. The territories comprised in the Colony of Northern Australia then reverted to New South Wales.

8. **Separation of Victoria, 1851.**—In 1851, what was known as the "Port Phillip District" of New South Wales, was constituted the Colony of Victoria, "bounded on the north and north-east by a straight line drawn from Cape Howe to the nearest source of the River Murray, and thence by the course of that river to the eastern boundary of the colony of South Australia." The area of the new colony is 87,884 square miles, and its separate existence took effect from the 1st July, 1851, upon the issuing of the writs for the first election of elective members of the Legislative Council; this reduced the territory of New South Wales to 1,574,712 square miles, as indicated on map No. 4.

9. **Separation of Queensland, 1859.**—The northern squatting districts of Moreton, Darling Downs, Burnett, Wide Bay, Maranoa, Leichhardt, and Port Curtis, together with the reputed county of Stanley, were granted an independent administration and formed into a distinct colony under the name of Queensland, by letters patent dated the 6th June, 1859, although separation from New South Wales was not consummated until the 10th December of the same year, upon the assumption of office of the first Governor. The territory originally comprised in the new colony was described in the letters patent as being so much of the colony of New South Wales as lies northwards of a line commencing on the sea coast at Point Danger, in latitude about 28° 8′ south, running westward along the Macpherson and Dividing Ranges and the Dumaresq River to the MacIntyre River, thence downward to the 29th parallel of south latitude, and following that parallel westerly to the 141st meridian of east longitude, which is the eastern boundary of South Australia, together with all the adjacent islands, their members, and appurtenances in the Pacific Ocean. In Year Book No. 1 it was stated that the western boundary of the new colony was defined by the letters patent of the 6th June, 1859, as being "the 141st meridian of longitude from the 29th to the 26th parallel, and thence the 138th meridian north to the Gulf of Carpentaria." Further investigations have, however, shewn that this statement is incorrect, and that the western boundary was not specifically defined at all. The western limits of the new colony were, however, defined by inference from the fact that its area comprised the territory to the northward of a line extending as far west as the 141st meridian of east longitude, *i.e.*, the 141st meridian was the western boundary. The area of the new colony thus constituted was 554,300 square miles. By this separation the remaining territory of New South Wales was divided into two parts, viz., one of 310,372 square miles, the present State, and another of 710,040 square miles, of which 116,200 square miles is now a part of Queensland, 523,620 square miles is the Northern Territory, and 70,220 square miles is now a part of South Australia. These facts are shewn on map No. 5.

10. **No further Creation of Colonies.**—Since the separation of Queensland, no other creation of colonies has taken place in Australia, though the boundaries of New South Wales, Queensland, and South Australia were altered later. The dates of foundation of the Australasian colonies, and their areas at the close of 1859, were therefore as hereunder:—

DATES OF FOUNDATION OF AUSTRALASIAN COLONIES AND AREAS AS AT END OF 1859.

Colony.	Date of Annexation.	Date of Creation.	Date of First Permanent Settlement.	Area. Square Miles.
New South Wales	1770	1786	1788	1,020,412
Tasmania	1770	1825	1803	26,215
South Australia	1770	1834	1836	309,850
Victoria	1770	1851	1834	87,884
Queensland	1770	1859	1824	554,300
Western Australia	1829	1829	1829	975,920
New Zealand	1840	1841	1814	104,471[1]

1. By proclamation dated 10th June, 1901, the area of the Dominion was increased by 280 square miles, making it now 104,751 square miles, by the inclusion of the Cook Group and other islands.

11. **The Changing Boundaries of the Colonies.**—When, on the 15th August, 1834, the Imperial Government constituted the province of South Australia, there lay between its western boundary and the eastern boundary of Western Australia (as proclaimed by Fremantle in 1829) a strip of country south of the 26th parallel of south latitude, and between the 132nd and 129th meridians of east longitude, legally included within the territory of New South Wales. The area of this territory, frequently but improperly referred to as "No Man's Land," has been calculated to cover approximately 70,220 square miles.[1] On the 10th October, 1861, by the authority of the Imperial Act 24 and 25 Vic., cap. 44, the western boundary of South Australia was extended so as to cover this strip, and to coincide with the eastern boundary of Western Australia—the 129th meridian. By letters patent dated the 13th March, 1861, forwarded by the Colonial Secretary to the Governor of Queensland on the 12th April, 1862, the area of Queensland was increased by the annexation of "so much of the colony of New South Wales as lies to the northward of the 26th parallel of south latitude, and between the 141st and 138th meridians of east longitude, together with all and every the adjacent islands, their members, and appurtenances, in the Gulf of Carpentaria." The area of South Australia was therefore increased by 70,220 square miles, and became 380,070 square miles, while the area of Queensland, increased by 116,200 square miles, became 670,500 square miles. The territories of these two States thus became as represented in map No. 6. Nearly two years after this accession of territory, viz., on the 6th July, 1863, the Northern Territory, containing 523,620 square miles—also formerly a part of New South Wales[2]—was, by letters patent, brought under the jurisdiction of South Australia, whose area was thus increased to 903,690 square miles; whilst that of New South Wales was diminished by these additions to South Australia, and by the separation of the colonies of New Zealand, Victoria and Queensland, till its area became only 310,372 square miles. The territories of Tasmania, Western Australia, and the three other separated colonies, with the exception of some minor islands added to Queensland, remain as originally fixed.[3]

1. The calculation has been made in this Bureau. The area has usually been left unstated in references to the territory, but when approximations have been given the margin of error seems to have been somewhat large.

2. A military post had been formed on Melville Island in 1825. This was transferred about 1827 to Raffles Bay, and some years later to Port Essington. The settlement at Port Essington was, like its predecessors, under the command of Sir Gordon Bremer, and was designed, in addition, as a harbour of refuge for distressed vessels. It was finally abandoned in 1849.

3. The facts and maps here given are in substantial though not in complete accordance with the illustrated statement shewing the subdivision of Australia between 1787 and 1863, issued by the Department of Lands, Sydney, 1904.

12. **Australasia, 1863 to 1900.**—The immense area generally known as Australasia had thus, by 1863, been divided into seven distinct colonies, the areas of which are shewn below.

From the 1st January, 1901, the colonies mentioned above, with the exception of New Zealand, have become federated under the name of the "Commonwealth of Australia," the designation of "Colonies" being at the same time changed into that of "States." The total area of the Commonwealth is, therefore, 2,974,581 square miles: the dates of creation and the areas of the separate colonies, as determined on the final adjustment of their boundaries, are shewn in the following table:—

DATES OF CREATION AND AREAS OF THE SEVERAL COLONIES.

Colony.	Year of Formation into Separate Colony.	Present Area in Square Miles.	Colony.	Year of Formation into Separate Colony.	Present Area in Square Miles.
New South Wales ...	1786	310,372	New Zealand ...	1841	104,751
Tasmania	1825	26,215	Victoria	1851	87,884
Western Australia ...	1829	975,920	Queensland ...	1859	670,500
South Australia (proper)[1]	1834	380,070	Northern Territory[1]	1863	523,620

Commonwealth ... ... 2,974,581 square miles.
Australasia ... ... 3,079,332 square miles.

1. South Australia with the Northern Territory is 903,690 square miles.

13. **British New Guinea or Papua.**—Under the administration of the Commonwealth, but not included in it, is British New Guinea or *Papua*, finally annexed by the British Government in 1884. This territory was for a number of years administered by the Queensland Government, but was transferred to the Commonwealth by proclamation on the 1st September, 1906, under the authority of the Papua Act (Commonwealth) of 16th November, 1905. The area of Papua is about 90,540 square miles. More extended reference to this dependency of the Commonwealth will be found in Section xxix.

14. **Proposed Transfer of the Northern Territory to the Commonwealth.**—On the 7th December, 1907, the Commonwealth and the State of South Australia entered into an agreement for the surrender to and acceptance by the Commonwealth of the Northern Territory, subject to approval by the Parliaments of the Commonwealth and the State. By the Northern Territory Surrender Act 1907, this agreement was approved by the South Australian Parliament, and in July, 1909, a Bill was introduced into the Commonwealth House of Representatives for the purpose of ratifying the agreement referred to.[1] The most important provisions of the Bill were:—(*a*) That the Northern Territory is declared to be accepted by the Commonwealth as a territory under the authority of the Commonwealth, by the name of the Northern Territory of Australia. (*b*) That the Commonwealth should assume responsibility for the State loans in respect of the Northern Territory (the amount of which loans on the 30th June, 1909, was £2,748,062) by annually reimbursing the State the amount of interest paid in connection with Northern Territory loans, by providing a sinking fund to pay off such loans on maturity, and by paying off the deficit in respect of the Northern Territory. (*c*) That the Commonwealth should construct a transcontinental railway from Pine Creek southwards to a point on the northern boundary of South Australia. (*d*) That the Commonwealth should, at the time of the acquisition of the Territory, purchase from South Australia the railway from Port Augusta to Oodnadatta, and (*e*) that the Commonwealth should construct a railway from a point on the Port Augusta railway to connect with the other

1. In August, 1910, the Bill was introduced in the Senate of the new Commonwealth Parliament under the title of The Northern Territory Acceptance Act 1910

part of the transcontinental railway at a point on the northern boundary of South Australia.

According to official returns the following statement shews what the amount of capital invested by the Commonwealth in connection with the Northern Territory would be :—

AMOUNT OF CAPITAL PROPOSED TO BE INVESTED BY COMMONWEALTH IN NORTHERN TERRITORY.

Particulars.	Public Debt at 30th June, 1909.	Deficit.	Cost of Port Augusta to Oodnadatta Railway.	Estimated cost of Pine Creek to Oodnadatta Railway.	Total.
Amount	£2,748,062	£779,734	£2,242,343	£4,500,000	£10,270,139

During the first year or two after the completion of the transcontinental railway the annual expenditure would be approximately as follows :—

ESTIMATED AMOUNT OF ANNUAL EXPENDITURE ON NORTHERN TERRITORY BY COMMONWEALTH.

Particulars.	Deficit on Northern Territory.	Deficit and Sinking Fund, on Railway, Port Augusta to Oodnadatta.	Interest on Cost of Pine Creek to Port Augusta Railway.	Total.
Amount	£158,439	£77,694	£157,500	£393,633

§ 4. The Exploration of Australia.

1. **Introduction.**—A fairly complete, though brief, account of the Exploration of Australia was given in Year Book No. 2 (pp. 20 to 39). It is proposed to give here only a brief summary of the more important facts relating to the subject. Maps shewing the progress of Australian exploration may be found on page 35 hereof.

2. **Eastern Australia.**—The first steps towards the exploration of New South Wales were taken by Captain Phillip and his officers, who, during 1788 and the years immediately following, made a number of excursions in the neighbourhood of Port Jackson, to Broken Bay, and along the Hawkesbury and Nepean Rivers.

(i.) *French Voyages of Exploration, 1788 to 1802.* Towards the close of the 18th century the French, who were supposed to covet territory in Australia, sent out several exploring expeditions. In 1788 two vessels under the command of La Pérouse put into Botany Bay to refit. In 1792 the French Admiral D'Entrecasteaux was in Australian waters with two vessels and discovered and named several places on the Tasmanian coasts. In 1800 an expedition, sent out by the French Republic, examined parts of the coasts of Van Diemen's Land and South Australia. It was chiefly in consequence of rumours to the effect that the French intended to establish a colony in Australia, that steps were taken by the British to form settlements at various places on the Australian coasts.

(ii.) *Bass and Flinders, 1796 to 1803.* In 1796 and 1797 Bass and Flinders explored the coast in a southerly direction from Port Jackson as far as Western Port. In 1798 Bass, accompanied by Flinders and eight seamen, circumnavigated the island of Tasmania, thus proving the existence of the straits which now bear his name. In 1801

Flinders again came to Australia in command of H.M.S. *Investigator*, which was the first vessel to completely circumnavigate the Australian continent.

(iii.) *Discovery of Port Phillip, 1802.* On the 5th January, 1802, Lieutenant Murray, who had been sent out to trace the coast between Point Schanck and Cape Otway, sighted the entrance to Port Phillip, which he did not, however, enter, owing to stress of weather, until the 15th February. Shortly afterwards Flinders entered Port Phillip, and in 1803 Charles Robbins explored the Yarra for some miles above the present site of Melbourne.

(iv.) *The Blue Mountains Crossed, 1813.* In 1813 Gregory Blaxland succeeded in effecting a passage over the Blue Mountains, which had previously proved an inaccessible barrier to all attempts to extend the infant colony in a westerly direction. G. W. Evans, following on Blaxland's tracks, soon penetrated further inland and discovered and named the Fish, Campbell, Macquarie, and Lachlan Rivers. In 1817 and 1818 John Oxley, Allan Cunningham, Charles Frazer, and others explored a considerable part of the Lachlan and Macquarie Rivers, and discovered and named the Castlereagh River, the Arbuthnot Range, the Liverpool Plains, the Hastings River, and Port Macquarie.

(v.) *Hamilton Hume, 1814 to 1824.* In 1816 Hamilton Hume, who two years previously had explored the country round Berrima, discovered and named the Goulburn Plains and Lake Bathurst. In 1824, accompanied by William Hilton Hovell, Hume, starting off from Lake George, reached the Murrumbidgee and sighted the Snowy Mountains. On the 16th December, 1824, he reached the Southern Ocean at the spot where Geelong now stands. This expedition had a great and immediate influence on the extension of Australian settlement.

(vi.) *Allan Cunningham, 1817 to 1829.* In 1823 Cunningham, who had accompanied Oxley in 1817, discovered and named Pandora's Pass, leading to the Liverpool Plains from the Upper Hunter, and in 1827 he discovered the Darling Downs.

(vii.) *Charles Sturt, 1828 to 1830.* In 1828 the Darling River was discovered by Sturt, who in the following year explored the Murray River, tracing it to its mouth at Lake Alexandrina in Encounter Bay. Sturt thus connected his overland journey with the discoveries of Flinders and other coastal explorers. In the meantime discovery on the Australian coasts had been followed up by Captains Wickham and Stokes in H.M.S. *Beagle*.

(viii.) *Sir Thomas Mitchell, 1831 to 1846.* In 1831 Mitchell discovered the lower courses of the Peel (Namoi), Gwydir, and Dumaresq Rivers, and identified the Upper Darling. Two years later he explored the country between the Bogan and Macquarie Rivers, and in 1835 he traced the Darling 300 miles down from Bourke. In 1836 he ascended the Murray and Loddon Rivers and discovered the Avoca, the Campaspe, and the Wimmera Rivers, reaching the coast near Cape Northumberland. On his return journey Mitchell visited Portland Bay, where he found the Henty family established, and ascending Mount Macedon, he saw and identified Port Phillip. In 1845 and 1846 Mitchell again set out, accompanied by Edmund B. Kennedy, and explored the Narran, Balonne, and Culgoa Rivers. Ascending the Balonne, he turned westward, exploring the Maranoa and the Warrego. Proceeding to the north he then discovered the Belyando and the Barcoo Rivers.

(ix.) *McMillan, Strzelecki, Leslie and Russell, 1839 to 1841.* In the meantime other explorers had been on the field and had made numerous discoveries. In 1839 and 1840 Angus McMillan discovered and named Lake Victoria, the Nicholson, Mitchell, and Macallister Rivers, and explored the country as far as the Latrobe River. In 1840 Strzelecki discovered Mount Kosciusko, the Latrobe River, and Lake King. In 1840 and 1841 Patrick Leslie and Stuart Russell explored the Condamine River.

(x.) *Leichhardt, 1844 to 1845.* In 1844 and 1845 Ludwig Leichhardt made a number of discoveries. Leaving the Condamine River he discovered the Dawson River, Peak

Downs, the Planet and Comet Rivers, and Zamia Creek. Later on he found and named the Mackenzie, Isaacs, Suttor, Burdekin, Lynd, Mitchell, Leichhardt, Nicholson, McArthur and Roper Rivers, and after exploring part of the coast of the Gulf of Carpentaria, reached the settlement of Victoria at Port Essington. In 1848 Leichhardt equipped another expedition and set out from the Cogoon. No sure clue as to his fate or as to the fate of his companions has ever come to light.

(xi.) *Kennedy, 1847 to 1848.* In 1848 Edmund Kennedy, who had accompanied Mitchell in 1845 and 1846, and who had further explored the Barcoo and Victoria Rivers in 1847, attempted to make his way up the eastern coast of Cape York Peninsula. After great hardships he reached the Escape River, where he was murdered by the blacks.

(xii.) *A. C. Gregory, 1846 to 1858.* A. C. Gregory's earliest explorations were in Western Australia, where in 1846 he discovered Lake Moore. In 1855 Gregory explored the Fitzmaurice and Victoria Rivers and Sturt's Creek. He examined the Gilbert River and its tributaries, and made his way in a westerly direction across to Brisbane. In 1858 Gregory explored the districts near the Barcoo and Thompson Rivers, Strzelecki's Creek, and Lake Blanche.

(xiii.) *Later Exploration of the North East, 1859 to 1872.* After Kennedy's ill-fated expedition the main portion of Eastern Australia was fairly well known. Certain parts of what is now Queensland, however, still remained unexplored. These were examined by G. E. Dalrymple in 1859, by Frederick Walker in 1862, by Frank and Alec Jardine in 1864, and by William Hann in 1872. Hann discovered the Tate, Walsh, Palmer and Normanby Rivers. This expedition practically completed the exploration of Eastern Australia. The gold discoveries on the Palmer River, in Queensland, following soon after, led to a considerable amount of minor exploration being carried out by prospectors, whose labours are, however, unrecorded.

3. **Central Australia.**—In 1836 Colonel Light surveyed the shores of St. Vincent's Gulf, and selected the sight for the settlement at Adelaide. In the same year Mitchell (see 1, viii. *ante*) had succeeded in travelling overland from the Darling to Cape Northumberland, and the settlers found little difficulty in driving stock from various parts of New South Wales to the new country. A great deal of minor exploration was done by these pioneers, the first of whom to lead the way across to the Port Phillip settlement with sheep in 1837 was Charles Bonney. In 1838 the overlanding of stock was extended to Adelaide by Joseph Hawdon.

(i.) *Eyre, 1838 to 1841.* In 1841 Edward John Eyre, who had previously discovered Lake Hindmarsh, and had explored the country to the north-east of Spencer's Gulf, succeeded, after great hardship, in reaching Albany overland from Adelaide. After this expedition settlers soon spread in a northerly direction from Adelaide, and various expeditions in search of grazing country were carried out by these pioneers.

(ii.) *Sturt's Later Explorations, 1844 to 1845.* In 1844 Charles Sturt, whose explorations in eastern Australia have already been referred to (see para. 2. vii. *ante*), set off from the Darling on an expedition to reach the centre of the continent. He reached his furthest point in latitude 24° 30′ S. and longitude 137° 58′ E. in September, 1845, and, after enduring great privations, was compelled to retreat through want of water.

(iii.) *Stuart, 1858 to 1862.* John MacDouall Stuart accompanied Captain Sturt on his last expedition as draughtsman. After minor explorations in the vicinity of Lake Eyre, Stuart made an unsuccessful attempt to cross the continent from south to north in 1860. After discovering the Frew, Fincke, and Stevenson Creeks, Chambers Pillar, and the McDonnell Range, he camped at the centre of Australia on the 22nd April, 1860. In the following year Stuart was placed in command of an expedition equipped by the South Australian Government, and succeeded in crossing the continent, reaching the sea at Chambers Bay on the 25th July, 1862.

(iv.) *Burke and Wills Expedition, 1860 to 1861.* In 1860 Robert O'Hara Burke and William Wills led an expedition northward from Melbourne to explore the country to the Gulf of Carpentaria. Through their arrangements having miscarried both Burke and Wills perished in the bush, after having crossed the continent and returned to their depôt at Fort Wills, only to find it deserted. Various relief expeditions were sent out, and among them may be specially mentioned Howitt's Relief Expedition, the Queensland Relief Expeditions under Walker and Landsborough, and the South Australian Relief Party under McKinlay. Though the actual work of exploration carried out by the Burke and Wills expedition was unimportant, the discoveries made by the relief parties sent out were of great value in opening up Central Australia.

(v.) *Giles, 1872 to 1876.* In 1872 Ernest Giles discovered Lake Amadeus and Mount Olga. In the same year and again in the following he made unsuccessful attempts to force his way through the deserts to the settlements of Western Australia. In 1875 Giles, accompanied by W. H. Tietkins, set off from Beltana, and after making his way in the vicinity of latitude 30° S., to the settled districts of Western Australia, returned to the Peake telegraph station by way of the Murchison, Gascoyne, and Ashburton Rivers.

(vi.) *Later Explorations.* Other explorations in Central Australia were carried out by Major Warburton (1873), W. C. Gosse (1873), W. O. Hodgkinson (1875), Nathaniel Buchanan (1878), Frank Scarr (1878), Ernest Favenc (1878-83), H. V. Barclay (1877), A. Johns and P. Saunders (1876), David Lindsay (1883), H. Stockdale (1884), W. H. Tietkins (1889), A. Searcy (1882-96), and Hubbe (1896).

4. **Western Australia.**—In 1791 George Vancouver, in command of H.M.S. *Discovery*, found and named St. George's Sound. On the 26th December, 1826, Major Lockyer, with a detachment of soldiers, landed at King George's Sound to form a settlement, under instructions from Sir Ralph Darling, then Governor of New South Wales. The settlement was established in order to forestall the French, who, it was rumoured, intended to occupy the harbour. Early in 1827 Captain James Stirling and Charles Frazer examined and reported upon the Swan River districts with a view to forming a settlement there. In 1829 Captain Fremantle landed at the mouth of the Swan River and took possession of the country. A month later Stirling arrived with the first settlers.

(i.) *Early Explorers.* In November, 1829, Alexander Collie and Lieutenant Preston explored the coast between Cockburn Sound and Géographe Bay, and in the following month Dr. J. B. Wilson, R.N., discovered and named the Denmark River.

In 1830 John Septimus Roe explored the country in the neighbourhood of Cape Naturaliste and between the Collie and Preston Rivers, and in 1835 examined the districts between the headwaters of the Kalgan and Hay Rivers. In 1836 and 1839 Roe explored the country north and east of Perth, and in 1848 traced the course of the Pallinup River for some distance.

Other early explorers in the West were Ensign R. Dale (1830), Captain Bannister (1831), W. K. Shenton (1831), J. G. Bussell (1831), Lieutenant Preston (1831), Alexander Collie (1832), F. Whitfield (1833), A. Hillman (1833), G. F. Moore (1834), and Lieutenant Bunbury (1836).

(ii.) *Grey, 1837 to 1839.* In 1837 Captain (afterwards Sir) George Grey discovered and traced the Glenelg River. In 1839 he explored the country between the Williams and Leschenault Rivers, and later succeeded in making his way along the coast from the mouth of the Gascoyne River to Perth.

(iii.) *F. T. Gregory, 1857 to 1861.* In 1857 and 1858 Frank T. Gregory examined the upper reaches of the Murchison River and reached the Gascoyne River, which he descended to its mouth, whence he made his way to Perth. In 1861 Gregory explored the north-western districts, discovering the Fortescue, Ashburton, Shaw, De Grey, and Oakover Rivers.

(iv.) *Sir John Forrest, 1869 to 1883.* In 1869 John (now Sir John) Forrest penetrated to the east some distance past Mount Margaret and discovered Lake Barlee. In 1870 he succeeded in making his way from Perth to Adelaide via Esperance Bay, Israelite Bay, and Eucla, and in 1874, accompanied by his brother Alexander and four others, he crossed from Geraldton to the overland telegraph line near Peake Station. In 1883 Forrest explored a large portion of the Kimberley Division, Cambridge Gulf and the lower part of the Ord River.

(v.) *Alexander Forrest, 1871 to 1879.* In 1879 Alexander Forrest, who had previously accompanied his brother on two expeditions, made his way from the De Grey River to the Daly Waters Station on the overland telegraph line, via Beagle Bay, the King Leopold Range, Nicholson Plains, and the Ord and Victoria Rivers.

(vi.) *L. A. Wells, 1892 to 1897.* In 1892 Wells examined practically the whole of the still unexplored districts between Giles' track of 1876 and Forrest's route of 1874, and in 1896 and 1897 he explored the country between the East Murchison and Fitzroy Rivers.

(vii.) *Later Explorations in Western Australia.* During the latter part of the 19th century various expeditions were sent out to explore those parts of Western Australia (chiefly in the north-western districts) which still remained unknown. Those whose names are connected with the later exploration of Western Australia are :—David Carnegie (1896-7), who discovered a practical stock route between Kimberley and Coolgardie ; W. Carr-Boyd (1883-96), who explored the country near the Rawlinson Ranges and made several excursions between the southern goldfields of Western Australia and the South Australian border ; H. F. Johnston, G. R. Turner, and E. T. Hardman (1884), who discovered the Mary and Elvire Rivers ; F. S. Brockman, Charles Crossland, Gibb Maitland, and Dr. F. M. House (1901), who explored the extreme north of the State ; F. H. Hann (1896-1907), who made various excursions in the north-west and between Laverton and Oodnadatta.

(viii.) *Other Explorers.* Other explorers whose names are connected with the exploration of Western Australia are :—George Eliot, who, in 1839, explored the country between the Williams and Leschenault ; William Nairne Clark, who, in 1841, discovered immense jarrah and karri forests in the south-west ; R. H. Bland (1842) ; H. Landor (1842) ; Lieutenant Helpmann (1844) ; Captain H. M. Denham (1858) ; B. D. Clarkson, C. E. and A. Dempster, and C. Harper (1861) ; C. C. Hunt and Ridley (1863) ; R. J. and T. C. Sholl (1865) ; A. McRae (1866) ; Philip Saunders and Adam Johns (1876) ; H. Stockdale (1884) ; H. Anstey (1887) ; F. Newman and W. P. Goddard (1890) ; J. H. Rowe (1895); C. A. Burrows and A. Mason (1896) ; Hugh Russell (1897) ; and John Muir (1901).

§ 5. The Constitutions of the States.[1]

1. **Introduction.**—The subject of "General Government" is dealt with in Section XXV. of this Book, but it has been thought desirable to here give a brief statement of the constitutional history of Australia, with a view to shewing how the present Constitutions of the States have been built up.

2. **Early Constitutional History.**—The earliest statute relating to Australia was passed in the year 1784, for the purpose of empowering the King in Council to appoint places in Australia to which convicts might be transported. By an Order in Council dated the 6th December, 1786, His Majesty's "territory of New South Wales, situated on the east part of New Holland," was appointed such a place. Captain Phillip, who was appointed the first Governor and Vice-Admiral of the territory, was empowered by

1. See "The Annotated Constitution of the Australian Commonwealth," Quick and Garran ; Jenks' "Government of Victoria" ; Rusden's "History of Australia."

his commission and letters patent to make ordinances for the good government of the settlement. By an Act passed in 1787 authority was given for the establishment of a court of criminal jurisdiction at Sydney. In the early days of settlement the Governor's power was almost absolute, and his rule virtually despotic, tempered by his own discretion and by the knowledge that he was responsible to the Imperial authorities for any maladministration. By Acts passed in 1819, 1821, and 1822, the Governor was given limited powers to impose local taxation in the shape of Customs duties on spirits, tobacco, and other goods imported into the Colony.

(i.) *The First Constitutional Charter.* In 1823 an Act was passed authorising the creation of a Council, consisting of from five to seven persons charged with certain legislative powers of a limited character. This was the first constitutional charter of Australia, and was later improved and amended by an Act passed in 1828, and applying both to New South Wales and to Van Diemen's Land, which had been politically separated in 1825.

(ii.) *First Representative Legislature.* In 1842 an important measure was passed by the Imperial Government, establishing, for the first time in Australia, a Legislature partly, but not wholly, representative in character. It was enacted that there should be within the colony of New South Wales a Legislative Council, to consist of thirty-six members, twelve of whom were to be nominated by the Sovereign and twenty-four elected by the inhabitants of the colony. The Act contained provisions defining the legislative functions of the Council, and regulated the giving or withholding of the Royal assent to Bills passed by the Council. This Act did not grant responsible government to New South Wales; the heads of the Departments and other public officers continued to hold their offices at the pleasure of the Crown, as represented by the Governor. The new Council was opened by Sir George Gipps, on the 1st August, 1843.

(iii.) *The Australian Colonies Government Act 1850.* The next important Act relating to representative government in Australia is the Australian Colonies Government Act, passed in 1850. The two main objects of this Act were (*a*) the separation of the Port Phillip District from New South Wales, and (*b*) the establishment of an improved system of government in all the Australian colonies. For New South Wales, for the separated Victoria, for Van Diemen's Land, and for South Australia, similar Legislatures were prescribed. The general provisions of the Act provided that the existing Legislature in New South Wales should decide the number of members of which a new Council was to consist in that colony, and should perform the same task for Victoria. On the issue of the writs for the first election in Victoria, separation was to be deemed complete. One-third of the number of members of the Council in each Colony was to be nominated by the Crown. The existing Legislatures in Van Diemen's Land and South Australia were to decide as to the number of members in the new Council in each, but they were not to exceed twenty-four. Power was given to the Governor and Legislative Council in each colony to alter the qualifications of electors and members as fixed by the Act, or to establish, instead of the Legislative Council, a Council and a House of Representatives, or other separate Legislative Houses, to be appointed or elected by such persons and in such manner as should be determined, and to vest in such Houses the powers and functions of the old Council. The powers and functions of the Councils under this Act were as follows:—(*a*) To make laws for the peace, order, and good government of the colony; (*b*) to impose taxation, including the imposition of Customs duties; and (*c*) to appropriate to the public service the whole of the public revenue arising from taxes, duties, rates, and imposts. The restrictions on the powers and functions of the Councils were as follows:—(*a*) That no such law should be repugnant to the law of England, (*b*) that no such law should interfere with the sale and appropriation of Crown lands, (*c*) that no Customs duties of a differential character should be imposed, and (*d*) that it should not be lawful for the Council to pass any Bill appropriating to the public service any sum of money for any purpose unless the Governor should have previously recommended that provision for such appropriation be made.

3. **The Constitution of New South Wales.**—After the Act just referred to had been proclaimed, an Electoral Bill for New South Wales was passed increasing the number of members of the Council from thirty-six to fifty-four, of whom thirty-six were to be elective and eighteen nominee members. The extraordinary increase in the wealth and prosperity of the colony owing to the discovery of gold, soon imparted new and unforeseen features to its political and social conditions. In 1851 a remonstrance was despatched by the Legislative Council of New South Wales to the Secretary of State for the Colonies, in which objection was taken to the form of Constitution which the Imperial authorities proposed to grant under the Act of 1850, on the grounds (*a*) that it did not place the control of all revenue and taxation entirely in the hands of the Colonial Legislature, (*b*) that all offices of trust and emolument should be filled by the Governor and Executive Council, unfettered by instructions from the Secretary of State for the Colonies, and (*c*) that plenary powers of legislation should be conferred on the Colonial Legislature. In 1852 the Secretary of State for the Colonies, in a despatch to the Governor of New South Wales, promised to give effect to the wishes of the Legislative Council, and suggested that the Legislative Council should proceed to frame a Constitution resembling that of Canada and based on a bi-cameral Legislature. A select committee of the Council was accordingly appointed to draft a Constitution, and as a result of the deliberations of this body the new Constitution was, on the 21st December, 1853, adopted by the Council and transmitted to the Secretary of State for the Colonies. As it contained provisions in excess of the powers conferred by the Act of 1850, the Bill could not receive the Royal assent, but had to be introduced into the Imperial Parliament. With some amendments the Bill was passed by the Imperial Government and received the Royal assent on the 16th July, 1855. It is now known as the New South Wales Constitution Act 1855, and under its provisions a fully responsible system of government was granted. The entire management and control of Crown lands was conferred on the New South Wales Parliament, while the provisions of former Acts respecting the allowance and disallowance of Bills were preserved. Subject to the provisions of the Act, power to make laws amending the Constitution was given to the New South Wales Parliament. The first Parliament, under the new Constitution, was opened by Sir William T. Denison, on the 22nd May, 1856. The Constitution was amended by Acts passed in 1857, 1884 and 1890, these Acts being repealed and consolidated by the Constitution Amendment Act of 1902. The last amending Act was passed in 1908.

4. **The Constitution of Victoria.**—After the proclamation of the Australian Colonies Government Act of 1850, the old Legislative Council of New South Wales met on the 28th March, 1851, for the purpose of making electoral and judicial arrangements required to bring the new Act into force in Victoria. Two Acts were passed specially concerning Victoria. The first provided for the continuation of the powers and functions of all public officers resident within the Port Phillip District until removed or reappointed by the Government of Victoria. The other Act provided that the Legislative Council of Victoria should consist of thirty members, ten nominee and twenty elective. On the 1st July, 1851, writs for the election of the elective members of the new Legislative Council of Victoria were issued and separation became complete. On the 15th July Mr. La Trobe was appointed the first Lieutenant-Governor of the colony. The powers and functions of the new Council were, under the Act of 1850, similar to those of the reorganised Legislative Council of New South Wales. The next important stage in the constitutional history of Victoria was that which was consummated by the attainment of a fully responsible system of government. Reference has already been made to the rapid advance in the population, wealth, and material prosperity of Australia consequent on the discovery of gold, and to the lead taken by the Legislature of New South Wales in the movement for an extension of constitutional power. In 1853 a despatch, similar to that received by the Governor of New South Wales (see above), was received by the Lieutenant-Governor of Victoria from the Secretary of State for the Colonies. A Constitution was drafted by a committee of the Legislative Council, and it was embodied in a Bill which was passed and reserved for the Queen's assent on the 28th March, 1854.

This Bill contained clauses similar to those of the New South Wales Bill relating to the assent of the Governor to bills and the Sovereign's power to disallow the same; to the sale and appropriation of Crown lands; and to the amendment of the Constitution by the Victorian Parliament. As the new Constitution contained provisions beyond those authorised by the Act of 1850 a special Enabling Act was necessary. The Bill was passed and assented to on the 16th July, 1855, and the new Constitution was proclaimed on the 23rd November following. Several amendments have since been made, chiefly with reference to the term of membership and the qualifications of members and electors. The last amending Act was passed in 1903.

5. **The Constitution of Queensland.**—As part of New South Wales, the Moreton Bay District enjoyed the benefits of responsible government under the Constitution Act of 1855. For electoral purposes the district was, in 1856, divided into eight electorates, returning nine members to the Legislative Assembly of New South Wales.

By an act passed in 1842 the Queen was empowered to erect into a separate colony any part of the territory of New South Wales lying to the northward of 26° south latitute, which was altered by the Australian Colonies Government Act 1850 to 30° south latitude. By the New South Wales Constitution Act 1855 the power previously granted to alter the northern boundary of New South Wales was distinctly preserved, and Her Majesty was authorised, by letters patent, to erect into a separate colony any territory which might be so separated. It was further enacted that Her Majesty, either by such letters patent or by Order in Council, might make provision for the government of any such new colony, and for the establishment of a Legislature therein, in manner as nearly resembling the form of government and legislature established in New South Wales as the circumstances of the new colony would permit. The separation was effected by letters patent dated the 6th June, 1859, and the Constitution of the new colony was embodied in an Order in Council of the same date.

The Order in Council provided that there should be within the colony of Queensland a Legislative Council and a Legislative Assembly, with the advice and consent of which Her Majesty should have power to make laws for the peace, welfare, and good government of the colony in all cases whatsoever. The powers and functions granted to this Legislature were substantially the same as those granted to New South Wales and Victoria under their respective Constitution Acts, and similar restrictions were imposed. The first Parliament under the new Constitution was convened on the 29th May, 1859. There have been several amendments of the Constitution, the dates of the amending Acts being as follows:—1867, 1871, 1874, 1890, 1896, and 1905.

6. **The Constitution of South Australia.**—The creation of South Australia as a Province has already been referred to above (see p. 19.) In the exercise of the provisions of the Act by which the Province was created, a governor, a judge, seven commissioners, and other officials were appointed. The Governor, with the concurrence of the Chief Justice, the Colonial Secretary, and the Advocate-General, or two of them, was authorised to make laws and impose taxes. The control of the Crown lands was placed in the hands of the Commissioners. In 1841 the settlement being involved in financial difficulties, a loan was advanced by the British Government. Under an Act passed in 1842 the system of government was remodelled; the colonisation commissioners were abolished, and the Province became a Crown colony. The Queen was empowered to constitute a nominated Legislative Council, consisting of the Governor and seven other persons resident in the colony, with power to make laws for the good government thereof. This system of government continued in force until the inauguration of a new scheme under the provisions of the Australian Colonies Government Act 1850, referred to above.

In 1853 the Legislative Council of South Australia, in pursuance of the powers conferred by the Act of 1850, passed a Bill to establish a bi-cameral Legislature for South Australia. The Royal assent was, however, refused on the grounds that the Bill contained a provision limiting the right of the Crown in respect to the disallowance of Bills, which provision was in excess of the powers conferred by the Act of 1850. In 1855 a

new Legislative Council, partly elective and partly nominee, having been duly constituted, a second Bill, based on the Tasmanian Constitution Bill, to create a bi-cameral Legislature, was passed and duly received the Royal assent in 1856. This Act, known as the South Australian Constitution Act 1856, confers no legislative powers except by reference to the Act of 1850. In order to ascertain the principal legislative powers and functions of the Parliament of South Australia reference must therefore be made to the Australian Colonies Government Act 1850, defining the legislative powers and functions of the Council for which it was substituted (see p. 28). The first session of the new Parliament commenced on the 22nd April, 1857, during the Governorship of Sir Richard Graves McDonnell.

The legislative powers of the South Australian Parliament have been considerably enlarged by several Imperial Acts. In 1855 an Act was passed authorising the Legislature of each of the Australian colonies to sell, dispose of, and legislate with reference to Crown lands in the colony. In 1865 the Colonial Laws Validity Act removed the common law restriction which prevented colonial legislators from passing any law repugnant to the law of England. In 1873 the prohibition contained in the Australian Colonies Government Act 1850 was, by the Australian Colonies Duties Act, abolished as far as intercolonial duties were concerned. There have been a large number of amendments to the Constitution, the dates of the amending Acts being as follows :—1870, 1872, 1873, 1876, 1881, 1882, 1887, 1888, 1889, 1890, 1892, 1893, 1894, 1896, 1899, 1901, and 1902.

7. **Constitution of Western Australia.**—In 1829 the first Imperial Act relating to the Government of Western Australia was passed. By that Act the King in Council was empowered to make and constitute, and to authorise any three or more persons resident within the settlements to make and constitute laws, institutions, and ordinances for the peace, order, and good government of the settlements in Western Australia. By an Order in Council dated the 1st November, 1830, the first Executive Council was constituted, while in the following year a Legislative Council, which consisted at first solely of members of the Executive Council, was formed. This system of government remained unaltered for many years, though the number of members of both Councils was increased from time to time. In August, 1870, the nominee Legislative Council was dissolved and writs were issued (under the Australian Colonies Government Act 1850, the provisions of which did not apply to Western Australia until that colony was able to defray its own expenses) for the election of a Council to consist of twelve elected and six nominated members. These numbers were again increased from time to time until the last Legislative Council under the old form of government, which expired on the 21st October, 1890, consisted of twenty-six members, of whom four were official members, five were nominees of the Crown, and seventeen were elected by the different constituencies. As far back as 1873 a movement was commenced in Western Australia for responsible government as it existed in the eastern colonies. In 1889 the Legislative Council was dissolved and a general election took place, the principal question being the introduction of responsible government. A resolution in favour of the change was passed by the new Council without dissent, and a Constitution providing for the creation of a bi-cameral Legislature was accordingly drafted. In August, 1890, an enabling Bill received the Royal assent, and responsible government was proclaimed in the colony on the 21st October, 1890. Under this Act the Legislative Council was a nominative chamber, subject to the provision that after the expiration of six years, or as soon as the colony acquired a population of 60,000, the Council should be constituted by election. The first Parliament under the new Constitution met on the 30th December, 1890. On the 18th July, 1893, the population of the colony being then over 60,000, the Legislature of Western Australia passed an Act to amend the Constitution, abolishing the nominee Council and substituting one elected by the qualified inhabitants of the colony. The present Constitution of Western Australia differs but little from those of the other States of the Commonwealth. It has been amended by Acts passed in 1893, 1894, 1896, 1899, and 1900.

8. **Constitution of Tasmania.**—Under an Order in Council dated the 14th June, 1825, and made in pursuance of the provisions of an Act passed in 1823, Van Diemen's Land, as it was officially known until the year 1853,[1] was separated from New South Wales and was proclaimed a separate colony. A Lieutenant-Governor was appointed, and an Executive and a Legislative Council were called into existence, the latter being on the same model as that introduced into the other colonies at the earliest stages of their constitutional progress. It was not until the Imperial Act of 1850 was passed, that a system of representative government was introduced into Tasmania. The provisions of that Act have already been briefly indicated (see p. 28) and will not be here repeated. A Constitution Bill was drafted and passed by the Legislative Council, and was assented to and proclaimed on the 24th October, 1856.

The Constitution of South Australia was based upon that of Tasmania, and the remarks made above with reference to the Constitution of the former State apply equally to the Constitution of the latter State.

The first Parliament under the new Constitution was opened on the 2nd December, 1856. The Constitution has been amended by Acts passed in 1870, 1884, 1885, 1890, 1900, 1903, and 1906.

9. **Enlarged Legislative Powers.**—The legislative powers and functions of the Parliaments of the States of the Commonwealth are in fact larger than they appear in the face of the Constitution Acts, inasmuch as contributory powers have been granted from time to time by Imperial Statutes. It is not within the scope of this work to enter into a consideration of the provisions of these Statutes. Among them, however, in addition to those already referred to (see "Constitution of South Australia" above), the following may be mentioned:—

Admiralty Offences (Colonial) Act 1860
Army Act 1881
Coinage Offences (Colonies) Act 1851
Colonial Copyright Act 1847
Colonial Marriages Act 1865
Colonial Naval Defence Act 1865
Extradition Acts 1870
Merchant Shipping Act 1894
Naturalisation Act 1870

10. **Reservation of Bills.**—The reservation of Bills passed by the Legislature of any State was formerly dealt with both by the instructions given to the State Governors and by various State Constitution Acts. The Australian States Constitution Act 1907 amended the law with respect to the reservation of Bills, and provided that the following Bills must be reserved for the signification of His Majesty's pleasure thereon, viz.:—Any Bill which (*a*) alters the Constitution of the Legislature of the State, or (*b*) affects the salary of the Governor of the State, or (*c*) is, under any Act of the Legislature of the State passed after the passing of the Australian States Constitution Act 1907, or under any provision contained in the Bill itself, required to be reserved. The Act does not, however, affect the reservation of Bills in accordance with any instructions given to the Governor of a State by His Majesty.

§ 6. The Federal Movement in Australia.

1. **Early Stages in the Federal Movement.**—A summary is given in Year Book No. 1 (pp. 17 to 21) of the "Federal Movement in Australia" from its earliest inception to its consummation. Only a synopsis of this will be given here.

Notwithstanding that, owing to the circumstances of their growth, the initial tendency in Australia was naturally toward the individualistic evolution of the several settlements, from the earliest period there was a clear recognition of the importance of intercolonial

1. In the year 1853, on the acquiescence of the Imperial Government in the cessation of transportation (finally abolished in 1857, by 20 and 21 Vic. c. 3), the name Tasmania was generally and voluntarily adopted instead of Van Diemen's Land. (See Quick and Garran's "Annotated Constitution of the Australian Commonwealth," p. 61.) It is interesting to note however, that the name Tasmania was applied to the island at a much earlier date, E.S in Godwin's "Emigrant's Guide to Van Diemen's Land, more properly called Tasmania." Published in 1823.

reciprocity. Governor Fitzroy, in 1846, and Earl Grey, in 1847, saw that there were questions which affected "Australia collectively, the regulation of which in some uniform manner, and by some single authority, may be essential to the welfare of them all," and a "central legislative authority for the whole of the Australian colonies" was actually contemplated. Even as far back as 1849, a Privy Council Committee recommended a uniform tariff, and the constituting of one of the Governors as Governor-General of Australia, Sir Charles Fitzroy being actually appointed as "Governor-General of all Her Majesty's Australian Possessions." The office, however, was nominal rather than actual, and expired in 1861. Dr. Lang's idea of "a great federation of all the colonies of Australia" was put forward in 1852, and a Victorian committee in 1853 advocated the value of the General Assembly of Delegates for the whole of Australia.

The need of union was urged by the *Sydney Morning Herald* in 1854, and, though in 1857 Wentworth sought to bring about the creation of a Federal Assembly, an "Enabling Bill" which was drafted turned out to be unacceptable to Her Majesty's Government. In the same year Mr. (afterwards Sir) Charles Gavan Duffy secured the appointment of a select committee of the Victorian Legislative Assembly to consider the necessity of a federal union of the Australasian colonies. The need for such union was unanimously affirmed, the general opinion being that it should not be longer delayed. In the same year a select committee of the New South Wales Legislative Council also considered this question, fully recognising that antagonisms and jealousies were likely to arise through delay.

Union was in a fair way toward realisation when the advent of the Cowper Administration destroyed all chance of attaining it, owing to the antagonism of Mr. Cowper and Mr. (afterwards Sir) James Martin. South Australia, also in the same year, and Queensland in 1859, were both unfavourable to the federal scheme. A second attempt by Mr. Duffy to bring about a conference in 1860 failed also.

Tariff differences, however, compelled political attention to the matter, and in 1862 correspondence was opened up by South Australia regarding tariff uniformity. By means of intercolonial conferences between 1863 and 1880 some degree of uniformity in legislation and a measure of concerted administration were realised. In March, 1867, Mr. (afterwards Sir) Henry Parkes expressed himself as follows:—". . . . The time has arrived when these colonies should be united by some federal bond. . . . There are questions projecting themselves . . . which cannot be dealt with by . . . individual Governments. . . . I believe it will lead to a permanent federal understanding." A Bill passed, however, was shelved by the Home Government.

2. **The Federal Council.**—The conference of November, December, 1880, and January, 1881, recommended the creation of a Federal Council, believing that the time had not arrived for a Federal Constitution with a Federal Parliament. Up till 1883, however, every effort proved abortive, but in November of that year a convention, at which the seven colonies and Fiji were represented, met in Sydney. A Bill to establish a Federal Council for Australasia, drafted by Mr. (now Sir) Samuel Griffith, was, after some modification by a committee of the convention, adopted. In July and August, 1884, the Crown was addressed, praying for the enactment of a Federal Council Act. New South Wales and New Zealand, however, held aloof, the view of Sir Henry Parkes being that a "council" would impede the way for a sure and solid federation. The Bill introduced by the Earl of Derby in the House of Lords on the 23rd April, 1885, became law on the 14th August as "The Federal Council of Australasia Act 1885." The Council's career, however, soon shewed that it could not hope to be effective, and it met for the last time in January, 1899.

3. **Formative Stages of the Federal Movement.**—So far Australia has happily enjoyed peace, but as early as 1878 the necessity for federal defence was vividly brought into Australian consciousness, and arrangements for naval protection were entered into with the Imperial Government. These were ratified by the Australasian Naval Force Act. Queensland, however, did not come into line until as late as 1891.

Early in 1889 Sir Henry Parkes had confidentially suggested to Mr. Duncan Gillies the necessity for a Federal Parliament and Executive. Unable to accept the latter's suggestion that New South Wales should give its adhesion to the Federal Council, the former statesman urged the institution of "a National Convention for the purpose of devising and reporting upon an adequate scheme of Federal Government." This led to the Melbourne Conference of 6th February, 1890. It was at the banquet on this occasion that, in proposing "A United Australasia," Mr. James Service pointed out that the tariff question was "a lion in the path," which federationists must either slay, or by which they must be slain; in the reply to which Sir Henry Parkes made use of his historic phrase, *the crimson thread of kinship runs through us all.* Certain elements of doubt being expressed as to the motives underlying the movement, Sir Henry Parkes said:—"We desire to enter upon this work of Federation without making any condition to the advantage of ourselves, without any stipulation whatever, with a perfect preparedness to leave the proposed convention free to devise its own scheme, and, if a central Parliament comes into existence, with a perfect reliance upon its justice, upon its wisdom, and upon its honour. . . . . I think . . . an overwhelming majority of my countrymen . . . will approve of the grand step . . . of uniting all the colonies under one form of beneficent government, and under one national flag."

The first National Australasian Convention, under Sir Henry Parkes' presidency, was convened on the 2nd March, 1891, all the colonies and New Zealand being represented. The Bill then drafted was considered by the Parliaments of New South Wales, Victoria, South Australia, and Tasmania, but not by those of Queensland, Western Australia, and New Zealand, and though the parliamentary process of dealing with the matter failed, federal sentiment was strengthening. The collapse of the "land boom" had made apparent how intimately the interests of each colony are related; and the dangers of disunion became impressively obvious. The Australian Natives' Association took up the federal cause with enthusiasm, Federation leagues were established, the issues were widely and intelligently discussed. The late Sir George Dibbs' unification scheme helped to make the issue a real one.

At the Conference of Premiers at Hobart on the 29th January, 1895, it was agreed that federation "was the great and pressing question of Australian politics," and that "the framing of a Federal Constitution" was an urgent duty. The resuscitation of the whole matter led to the passing of Enabling Acts. In New South Wales the Act received the Royal assent on the 23rd December, 1895; South Australia anticipated this by three days; the Tasmanian Bill was passed on the 10th January, 1896, the Victorian on the 7th March, 1896; Western Australia fell into line on the 27th October. The "People's Federal Convention," held at Bathurst, N.S.W., in November, 1896, gave a considerable impulse to the movement; to wait longer for Queensland was considered unnecessary, and the 4th March, 1897, was fixed as the date for the election of federal representatives for New South Wales, Victoria, South Australia, and Tasmania. Western Australia followed suit and on the 22nd March the representatives met at Adelaide.

The discussions made it evident that the federal point of view had advanced considerably. Constitutional, Finance, and Judiciary Committees were appointed, and a Bill drafted. This, reported to the Convention on the 22nd April, was adopted on the following day, and the Convention adjourned till September. The Parliaments of New South Wales, Victoria, South Australia, Tasmania, and Western Australia discussed the question before the Sydney Session of the Convention, which opened on the 2nd September, 1897. The business of the Convention involved the general reconsideration of the whole Bill, and the consideration of no less than 286 suggested amendments. This work gave a definitive character to that of the Melbourne Session of 1898, extending from the 20th January to the 17th March, the necessity of reaching a final decision giving to its deliberations corresponding weight.

4. **Votes on the Question of Federating.**—Eleven weeks after this last convention, the first popular vote was taken on Federation in New South Wales, Victoria, South Australia, and Tasmania. Though the decision was overwhelming in favour of Federation



PROGRESS OF AUSTRALIAN EXPLORATION.

The above maps compiled by Mr. E. Favenc shew decennially the progress of discovery from 1808 to 1888. The dark shade shews the area of unexplored territory.



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tion in three of the States, and there was a distinct majority in its favour in New South Wales, the majority was legally insufficient. On the 22nd January, 1899, the Premiers of the six colonies met at Melbourne in a conference initiated by the Right Honourable G. H. Reid, P.C., and seven amendments were made in the Bill. This step virtually effected the solution of the few outstanding difficulties which could in any way be regarded as fundamental.

On the occasion of the second popular vote Queensland also joined in, and the general majority in favour of Federation was more than doubled, that for New South Wales itself having been more than quadrupled when compared with the first vote. The following table shews the two results:—

VOTES FOR AND AGAINST FEDERATION.

Votes.		N.S.W.	Victoria.	Sth. Aust.	Tas.	Qld.	TOTALS.
1st Vote	For Federation ...	71,595	100,520	35,800	11,797	—	**219,712**
	Against ,, ...	66,228	22,099	17,320	2,716	—	**108,363**
	Majority	5,367	78,421	18,480	9,081	—	**111,349**
2nd Vote	For Federation ...	107,420	152,653	65,990	13,437	38,488	**377,988**
	Against ,, ...	82,741	9,805	17,053	791	30,996	**141,386**
	Majority	24,679	142,848	48,937	12,646	7,492	**236,602**

5. **Enactment of the Constitution.**—The Secretary of State for the Colonies (the Right Honourable Joseph Chamberlain) expressed the hope on the 22nd December, 1899, that a delegation of the federating colonies would visit England on the occasion of the submission of the Commonwealth Bill to the Imperial Parliament. The delegation consisted of Mr. (now Sir) Edmund Barton (N.S.W.), Mr. Alfred Deakin (Vic.), Mr. C. C. Kingston (S.A.), Sir P. O. Fysh (Tas.), and later Mr. S. H. Parker was appointed delegate for Western Australia and Mr. W. P. Reeves for New Zealand. After discussion as to whether there should be some modification in the Bill, it was introduced into the House of Commons on the 14th May; the second reading was moved on the 21st of the same month; the discussion in committee commenced on the 18th June; and the Royal assent was given on the 9th July, 1900.

On the 31st July a referendum in Western Australia on the question of federating gave the result:—For, 44,800; against, 19,691; that is to say, a majority of 25,109 in favour of union. On the 21st August both Houses of Parliament in that State passed addresses praying that it might be included as an original State of the Commonwealth.

On the 17th September, 1900, Her Majesty Queen Victoria signed the proclamation declaring that on and after the first day of January, 1901, the people of New South Wales, Victoria, South Australia, Queensland, Tasmania, and Western Australia should be united in a Federal Commonwealth, under the name of the Commonwealth of Australia.

§ 7. Creation of the Commonwealth.

1. **The Act.**—The Commonwealth of Australia Constitution Act, 63 and 64 Vic., Chapter 12, namely, an Act to constitute the Commonwealth of Australia, which, as already stated, received the Royal assent on the 9th July, 1900, is given in Year Book No. 1 *in extenso* (pp. 21 to 37). The division of the Constitution is as follows:—

Chapter I.—The Parliament:—
- Part I.—General.
- Part II.—The Senate.
- Part III.—The House of Representatives.
- Part IV.—Both Houses of Parliament.
- Part V.—Powers of the Parliament.

Chapter II.—The Executive Government.
Chapter III.—The Judicature.
Chapter IV.—Finance and Trade.
Chapter V.—The States.
Chapter VI.—New States.
Chapter VII.—Miscellaneous.
Chapter VIII.—Alteration of the Constitution.
The Schedule.

2. **Summary of the Commonwealth Constitution.**—These chapters may be summarised as follows :—

CHAPTER I.—THE PARLIAMENT.

PART I.—GENERAL (SECTIONS 1 TO 6).

The legislative power of the Commonwealth is vested in the Federal Parliament consisting of the Sovereign, the Senate, and the House of Representatives. A Governor-General, appointed by the King, represents His Majesty in the Commonwealth, and exercises, subject to the Constitution, such powers and functions as His Majesty is pleased to assign to him. The salary of the Governor-General is fixed at £10,000 per annum until otherwise provided by Parliament. The Governor-General may appoint the times for holding the sessions of Parliament; he may prorogue Parliament, and may dissolve the House of Representatives.

PART II.—THE SENATE (SECTIONS 7 TO 23).

Until Parliament otherwise provides, there are to be six senators for each original State, chosen by the people of the State voting as one electorate. Equal representation of the original States must be maintained, and no original State may have less than six senators. The senators are chosen for a term of six years. The qualification for electors of senators is the same as the qualification for electors of members of the House of Representatives. Provision is made whereby half the senators for each State vacate their seats at the expiration of three years in the case of the election of a new Senate. The qualifications of a senator are the same as those of a member of the House of Representatives. The place of a senator becomes vacant if he fails to attend the meetings of the Senate, without permission, for two consecutive months of any session. At least one-third of the whole number of senators must be present in order to constitute a meeting of the Senate. Under the provisions of the Senate Elections Act 1907, a senator cannot receive his powers and privileges until the end of the June following his election.

PART III.—THE HOUSE OF REPRESENTATIVES (SECTIONS 24 TO 40).

The number of members of the House of Representatives is, as nearly as practicable, twice the number of senators, and the numbers of members elected in the several States are in proportion to the respective populations of the States, unless otherwise determined by Parliament. The House is elected for three years, but may be sooner dissolved by the Governor-General. Until Parliament otherwise provides, qualifications for membership are as follows:—(*a*) Members must be of the full age of twenty-one years, must be qualified for the franchise of the House, and must have been resident within the Commonwealth for at least three years, and (*b*) must be natural-born British subjects or for at least five years naturalised under a law of the United Kingdom, or of a colony which has become or becomes a State, or of the Commonwealth, or of a State. A member vacates his seat if he fails to attend the meetings of the House, without permission, for two consecutive months in any session. Until Parliament otherwise provided, the qualification for the franchise of the House of Representatives was in each State the same as that for the franchise of the more numerous House of Parliament in the State, but each elector could vote only once.[1]

PART IV.—BOTH HOUSES OF PARLIAMENT (SECTIONS 41 TO 50).

Any adult person who is qualified to vote at elections for the more numerous House of Parliament of a State cannot be prevented by any law of the Commonwealth from voting at elections for either of the Commonwealth Houses of Parliament. A person subject to certain disqualifications, such as being attainted of treason, being an undischarged bankrupt, holding an office of profit under the Crown (except as a Minister of State or as an officer or member of the naval or military forces of the Commonwealth), or

1. The franchise qualification was determined by the Commonwealth Franchise Act, 1902.

having a pecuniary interest in any agreement with the Commonwealth Public Service (except as a member of a company), may not be elected or sit as a member of either House. Until the Parliament otherwise provided, each senator and each member of the House of Representatives received an allowance of £400 a year.[2] The powers and privileges of members of both Houses are as declared by Parliament, and until declared are the same as those of the Commons House of Parliament of the United Kingdom. Each House may make rules and orders with respect to—(*a*) The mode in which its powers, privileges, and immunities may be exercised and upheld, and (*b*) the order and conduct of its business and proceedings, either separately or jointly with the other House.

PART V.—POWERS OF THE PARLIAMENT (SECTIONS 51 TO 60).

The Commonwealth Parliament has, subject to the Constitution, power to make laws for the peace, order, and good government of the Commonwealth with respect to—

(i.) Trade and commerce with other countries, and among the States :
(ii.) Taxation ; but so as not to discriminate between States or parts of States :
(iii.) Bounties on the production or export of goods, but so that such bounties shall be uniform throughout the Commonwealth :
(iv.) Borrowing money on the public credit of the Commonwealth :
(v.) Postal, telegraphic, telephonic, and other like services :
(vi.) The naval and military defence of the Commonwealth and of the several States, and the control of the forces to execute and maintain the laws of the Commonwealth :
(vii.) Lighthouses, lightships, beacons and buoys :
(viii.) Astronomical and meteorological observations :
(ix.) Quarantine :
(x.) Fisheries in Australian waters beyond territorial limits :
(xi.) Census and statistics :
(xii.) Currency, coinage, and legal tender :
(xiii.) Banking, other than State banking ; also State banking extending beyond the limits of the State concerned, the incorporation of banks, and the issue of paper money :
(xiv.) Insurance, other than State insurance ; also State insurance extending beyond the limits of the State concerned :
(xv.) Weights and measures :
(xvi.) Bills of exchange and promissory notes :
(xvii.) Bankruptcy and insolvency :
(xviii.) Copyrights, patents of inventions and designs, and trade marks :
(xix.) Naturalisation and aliens :
(xx.) Foreign corporations, and trading or financial corporations formed within the limits of the Commonwealth :
(xxi.) Marriage :
(xxii.) Divorce and matrimonial causes ; and in relation thereto, parental rights, and the custody and guardianship of infants :
xxiii.) Invalid and old-age pensions :
(xxiv.) The service and execution throughout the Commonwealth of the civil and criminal process and the judgments of the Courts of the States :
(xxv.) The recognition throughout the Commonwealth of the laws, the public Acts and records, and the judicial proceedings of the States :
(xxvi.) The people of any race, other than the aboriginal race in any State, for whom it is deemed necessary to make special laws :
(xxvii.) Immigration and emigration :
(xxviii.) The influx of criminals :
(xxix.) External affairs :
(xxx.) The relations of the Commonwealth with the islands of the Pacific :

2. By the Parliamentary Allowances Act 1907, assented to on the 28th August, the amount of the allowance was increased to £600 a year.

(xxxi.) The acquisition of property on just terms from any State or person for any purpose in respect of which the Parliament has power to make laws :

(xxxii.) The control of railways with respect to transport for the naval and military purposes of the Commonwealth :

(xxxiii.) The acquisition, with the consent of a State, of any railways of the State on terms arranged between the Commonwealth and the State :

(xxxiv.) Railway construction and extension in any State with the consent of that State :

(xxxv.) Conciliation and arbitration for the prevention and settlement of industrial disputes extending beyond the limits of any one State :

(xxxvi.) Matters in respect of which this Constitution makes provision until the Parliament otherwise provides :

(xxxvii.) Matters referred to the Parliament of the Commonwealth by the Parliament or Parliaments of any State or States, but so that the law shall extend only to States by whose Parliaments the matter is referred, or which afterwards adopt the law :

(xxxviii.) The exercise within the Commonwealth, at the request or with the concurrence of the Parliaments of all the States directly concerned, of any power which can at the establishment of this Constitution be exercised only by the Parliament of the United Kingdom or by the Federal Council of Australasia :

(xxxix.) Matters incidental to the execution of any power vested by this Constitution in the Parliament or in either House thereof, or in the Government of the Commonwealth, or in the Federal Judicature, or in any department or officer of the Commonwealth.

The Parliament has also, subject to the Constitution, exclusive power to make laws for the peace, order, and good government of the Commonwealth with respect to—

(i.) The seat of Government of the Commonwealth, and all places acquired by the Commonwealth for public purposes :

(ii.) Matters relating to any department of the public service the control of which is by this Constitution transferred to the Executive Government of the Commonwealth :

(iii.) Other matters declared by this Constitution to be within the exclusive power of the Parliament.

Proposed laws appropriating revenue or moneys, or imposing taxation, may not originate in the Senate, and the Senate may not amend proposed laws either (*a*) imposing taxation, (*b*) appropriating money for the ordinary annual services of the Government, or (*c*) so as to increase any proposed charge or burden on the people.

If the House of Representatives passes any proposed law, and the Senate rejects or fails to pass it, or passes it with amendments to which the House of Representatives will not agree, and if after an interval of three months the House of Representatives, in the same or the next session, again passes the proposed law with or without any amendments which have been made, suggested or agreed to by the Senate, and the Senate rejects or fails to pass it, or passes it with amendments to which the House of Representatives will not agree, the Governor-General may dissolve the Senate and the House of Representatives simultaneously. But such dissolution may not take place within six months before the date of the expiry of the House of Representatives by effluxion of time.

If after such dissolution the House of Representatives again passes the proposed law, with or without any amendments which have been made, suggested, or agreed to by the Senate, and the Senate rejects or fails to pass it, or passes it with amendments to which the House of Representatives will not agree, the Governor-General may convene a joint sitting of the members of the Senate and of the House of Representatives.

The members present at the joint sitting may deliberate and vote together upon the proposed law as last proposed by the House of Representatives, and upon amendments, if any, which have been made therein by one House and not agreed to by the other, and any such amendments which are affirmed by an absolute majority of the total number

of the members of the Senate and House of Representatives shall be taken to have been carried, and if the proposed law, with the amendments, if any, so carried is affirmed by an absolute majority of the total number of members of the Senate and House of Representatives, it shall be taken to have been duly passed by both Houses of the Parliament, and shall be presented to the Governor-General for the Queen's assent.

When a proposed law passed by both Houses of the Parliament is presented to the Governor-General for the Queen's assent, he shall declare, according to his discretion, but subject to this Constitution, that he assents in the Queen's name, or that he withholds assent, or that he reserves the law for the Queen's pleasure.

The Governor-General may return to the House in which it originated any proposed law so presented to him, and may transmit therewith any amendments which he may recommend, and the Houses may deal with the recommendation.

The Queen may disallow any law within one year from the Governor-General's assent, and such disallowance on being made known by the Governor-General by speech or message to each of the Houses of the Parliament, or by proclamation, shall annul the law from the day when the disallowance is so made known.

CHAPTER II.—THE EXECUTIVE GOVERNMENT (SECTIONS 61 TO 70).

The executive power of the Commonwealth is vested in the Queen and is exercisable by the Governor-General as the Queen's representative, and extends to the execution and maintenance of the Constitution, and the laws of the Commonwealth.

The Executive Council advises the Governor-General in the government of the Commonwealth, and the members of the Council are chosen and summoned by the Governor-General and sworn as Executive Councillors, and hold office during his pleasure. The Governor-General may appoint officers to administer such departments of State of the Commonwealth as the Governor-General in Council may establish. Such officers hold office during the pleasure of the Governor-General. They are members of the Federal Executive Council, and are the Queen's Ministers of State for the Commonwealth. After the first general election no Minister of State may hold office for a longer period than three months unless he is or becomes a senator or a member of the House of Representatives. Until the Parliament otherwise provides, the Ministers of State may not exceed seven in number, and their joint salaries may not exceed £12,000 a year. The command-in-chief of the naval and military forces of the Commonwealth is vested in the Governor-General as the Sovereign's representative, while the appointment and removal of all officers of the Executive Government is vested in the Governor-General in Council, unless the appointment is delegated by the Governor-General in Council or by a law of the Commonwealth to some other authority.

On a date or dates to be proclaimed by the Governor-General after the establishment of the Commonwealth the following departments of the public service in each State shall become transferred to the Commonwealth :—[1]

Posts, telegraphs, and telephones :	Lighthouses, lightships, beacons, and buoys :
Naval and military defence :	Quarantine.

But the departments of customs and of excise in each State shall become transferred to the Commonwealth on its establishment.

CHAPTER III.—THE JUDICATURE (SECTIONS 71 TO 80).

The judicial power of the Commonwealth is vested in a Federal Supreme Court, to be called the High Court of Australia, and in such other federal courts as the Parliament creates, and in such other courts as it invests with federal jurisdiction. The High Court shall consist of a Chief Justice, and so many other Justices, not less than two, as the Parliament prescribes. The Justices of the High Court and of the other courts created by the Parliament—

1. As to departments transferred and dates of transfer, see Section XIX.—COMMONWEALTH FINANCE, § 1, 2, hereafter.

(i.) Are to be appointed by the Governor-General in Council :

(ii.) May not be removed except by the Governor-General in Council, on an address from both Houses of the Parliament in the same session, praying for such removal on the ground of proved misbehaviour or incapacity :

(iii.) May receive such remuneration as the Parliament may fix ; but the remuneration shall not be diminished during their continuance in office.

The High Court has jurisdiction, with such exceptions and subject to such regulations as the Parliament prescribes, to hear and determine appeals from all judgments, decrees, orders, and sentences—

(i.) Of any Justice or Justices exercising the original jurisdiction of the High Court :

(ii.) Of any other federal court, or court exercising federal jurisdiction ; or of the Supreme Court of any State, or of any other court of any State from which at the establishment of the Commonwealth an appeal lies to the Queen in Council :

(iii.) Of the Interstate Commission, but as to questions of law only :

and the judgment of the High Court in all such cases is final and conclusive.

Until the Parliament otherwise provides, the conditions of and restrictions on appeals to the Queen in Council from the Supreme Courts of the several States are applicable to appeals from them to the High Court.

No appeal may be made to the Queen in Council from a decision of the High Court upon any question, howsoever arising, as to the limits *inter se* of the Constitutional powers of the Commonwealth and those of any State or States, or as to the limits *inter se* of the Constitutional powers of any two or more States, unless the High Court certify that the question is one which ought to be determined by Her Majesty in Council.

The High Court has original jurisdiction in all matters :—(i.) Arising under any treaty : (ii.) Affecting consuls or other representatives of other countries : (iii.) In which the Commonwealth, or a person suing or being sued on behalf of the Commonwealth, is a party : (iv.) Between States, or between residents of different States, or between a State and a resident of another State : (v.) In which a writ of Mandamus or prohibition or an injunction is sought against an officer of the Commonwealth ; while Parliament may make laws conferring original jurisdiction on the High Court in any matter—(i.) Arising under the Constitution or under any laws made by the Parliament : (ii.) Of Admiralty and maritime jurisdiction : (iii.) Relating to the same subject matter claimed under the laws of different States.

CHAPTER IV.—FINANCE AND TRADE (SECTIONS 81 TO 105).

On the establishment of the Commonwealth, the collection and control of duties of customs and of excise, and the control of the payment of bounties, passed to the Executive Government of the Commonwealth. During a period of ten years after the establishment of the Commonwealth and thereafter until the Parliament otherwise provides, of the net revenue of the Commonwealth from duties of customs and of excise not more than one-fourth is to be applied annually by the Commonwealth towards its expenditure. The balance, in accordance with the Constitution, is to be paid to the several States, or applied to the payment of interest on debts of the several States taken over by the Commonwealth.[2]

Uniform duties of customs shall be imposed within two years after the establishment of the Commonwealth, and on the imposition of such duties, trade, commerce, and intercourse among the States shall be absolutely free,[1] and the power of the Commonwealth Parliament to impose duties of customs and excise, and to grant bounties on the production or export of goods, shall become exclusive.

1. Uniform customs duties were imposed by the Customs Tariff Act 1902 (see Section XV. COMMERCE, § 2, hereafter).

2. This is known as the Braddon clause. The Surplus Revenue Act 1910 provides for the termination of this clause as from the 31st December, 1910, and for the payment to the States of twenty-five shillings per annum per head of population until the 30th June, 1920, or thereafter, until Parliament otherwise provides, subject to certain adjustments for the year ended 30th June, 1911. For further information see Section XIX. hereinafter.

Until the imposition of uniform duties of customs it was provided that—

(i.) The Commonwealth should credit to each State the revenues collected therein by the Commonwealth.

(ii.) The Commonwealth should debit to each State—(*a*) The expenditure therein of the Commonwealth incurred solely for the maintenance or continuance as at the time of transfer, of any department transferred from the State to the Commonwealth. (*b*) The proportion of the State, according to the number of its people, in the other expenditure of the Commonwealth.

(iii.) The Commonwealth should pay to each State month by month the balance (if any) in favour of the State.

During the first five years after the imposition of uniform duties of customs, and thereafter until the Parliament otherwise provides—(i.) The duties of customs chargeable on goods imported into a State and afterwards passing into another State for consumption, and the duties of excise paid on goods produced or manufactured in a State and afterwards passing into another State for consumption, shall be taken to have been collected not in the former but in the latter State: (ii.) Subject to the last sub-section, the Commonwealth shall credit revenue, debit expenditure, and pay balances to the several States as prescribed for the period preceding the imposition of uniform duties of customs.

After five years from the imposition of uniform duties of customs, the Parliament may provide, on such basis as it deems fair, for the monthly payment to the several States of all surplus revenue of the Commonwealth, and during a period of ten years after the establishment of the Commonwealth and thereafter until the Parliament otherwise provides, the Parliament may grant financial assistance to any State on such terms and conditions as the Parliament thinks fit.[1]

The power of the Parliament to make laws with respect to trade and commerce extends to navigation and shipping, and to the State Government railways. The Commonwealth may not, however, by any law or regulation of trade, commerce, or revenue give preference to one State over another, nor by any law or regulation of trade or commerce abridge the right of a State to the reasonable use of rivers for conservation or irrigation.

CHAPTER V.—THE STATES (SECTIONS 106 TO 120).

The Constitution of each State of the Commonwealth, subject to the Constitution, continues as at the establishment of the Commonwealth, or as at the admission or establishment of the State, as the case may be, until altered in accordance with the Constitution of the State. Every power of the Parliament of a Colony which has become or becomes a State, unless it is by this Constitution exclusively vested in the Parliament of the Commonwealth or withdrawn from the Parliament of the State, continues as at the establishment of the Commonwealth, or as at the admission or establishment of the State, as the case may be, and every law in force in a Colony which has become or becomes a State, and relating to any matter within the powers of the Parliament of the Commonwealth, subject to the Constitution, continues in force in the State; and, until provision is made in that behalf by the Parliament of the Commonwealth, the Parliament of the State has such powers of alteration and of repeal in respect of any such law as the Parliament of the Colony had until the Colony became a State.

When a law of a State is inconsistent with a law of the Commonwealth, the latter prevails, and the former, to the extent of the inconsistency, is invalid.

The Parliament of a State may surrender any part of the State to the Commonwealth; and upon such surrender, and the acceptance thereof by the Commonwealth, such part of the State becomes subject to the exclusive jurisdiction of the Commonwealth.

After uniform duties of customs have been imposed, a State may levy on imports or exports, or on goods passing into or out of the State, such charges as may be necessary for executing the inspection laws of the State; but the net produce of all charges so levied shall be for the use of the Commonwealth; and any such inspection laws may be annulled by the Parliament of the Commonwealth.

1. See note 2 on the preceding page.

CHAPTER VI.—NEW STATES (SECTIONS 121 TO 124).

The Parliament may admit to the Commonwealth or establish new States, and may upon such admission or establishment make or impose such terms and conditions, including the extent of representation in either House of the Parliament, as it thinks fit.

The Parliament may make laws for the government of any territory surrendered by any State to and accepted by the Commonwealth, or of any territory placed by the Queen under the authority of and accepted by the Commonwealth, or otherwise acquired by the Commonwealth, and may allow the representation of such territory in either House of the Parliament to the extent and on the terms which it thinks fit.

The Parliament of the Commonwealth may, with the consent of the Parliament of a State, and the approval of the majority of the electors of the State voting upon the question, increase, diminish, or otherwise alter the limits of the State, upon such terms and conditions as may be agreed on, and may, with the like consent, make provision respecting the effect and operation of any increase or diminution or alteration of territory in relation to any State affected.

A new State may be formed by separation of territory from a State, but only with the consent of the Parliament thereof, and a new State may be formed by the union of two or more States or parts of States, but only with the consent of the Parliaments of the States affected.

CHAPTER VII.—MISCELLANEOUS (SECTIONS 125 TO 127).

The seat of Government of the Commonwealth shall be determined by the Parliament, and shall be within territory which shall have been granted to or acquired by the Commonwealth, and shall be vested in and belong to the Commonwealth, and shall be in the State of New South Wales, and be distant not less than one hundred miles from Sydney. Such territory shall contain an area of not less than one hundred square miles, and such portion thereof as shall consist of Crown lands shall be granted to the Commonwealth without any payment therefor. The Parliament shall sit at Melbourne until it meet at the seat of Government.

The Queen may authorise the Governor-General to appoint any person, or any persons jointly or severally, to be his deputy or deputies within any part of the Commonwealth.

CHAPTER VIII.—ALTERATION OF THE CONSTITUTION (SECTION 128).[1]

The Constitution may not be altered except in the following manner:—

The proposed law for the alteration thereof must be passed by an absolute majority of each House of the Parliament, and not less than two nor more than six months after its passage through both Houses the proposed law must be submitted in each State to the electors qualified to vote for the election of members of the House of Representatives.

But if either House passes any such proposed law by an absolute majority, and the other House rejects or fails to pass it or passes it with any amendment to which the first-mentioned House will not agree, and if after an interval of three months the first-mentioned House in the same or the next session again passes the proposed law by an absolute majority with or without any amendment which has been made or agreed to by the other House, and such other House rejects or fails to pass it or passes it with any amendment to which the first-mentioned House will not agree, the Governor-General may submit the proposed law as last proposed by the first-mentioned House, and either with or without any amendments subsequently agreed to by both Houses, to the electors in each State qualified to vote for the election of the House of Representatives.

When a proposed law is submitted to the electors the vote is taken in such manner as the Parliament prescribes. And if in a majority of the States a majority of the electors voting approve the proposed law, and if a majority of all the electors voting also approve the proposed law, it is presented to the Governor-General for the Queen's assent.

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1. The Constitution has been altered by the following Acts:—The Referendum (Constitution Alteration) Act 1906; The Constitution Alteration (Senate Election) 1906 Acts.

No alteration diminishing the proportionate representation of any State in either House of the Parliament, or the minimum number of representatives of a State in the House of Representatives, or increasing, diminishing, or otherwise altering the limits of the State, or in any manner affecting the provisions of the Constitution in relation thereto, can become law unless the majority of the electors voting in that State approve the proposed law.

3. **The Royal Proclamation.**—The preceding Act received the Royal assent on the 9th July, 1900. This made it lawful (see Sec. 3) to declare that the people of Australia should be united in a Federal Commonwealth. This proclamation, made on the 17th September, 1900, constituted the Commonwealth as from the 1st January, 1901: it reads as follows :—

BY THE QUEEN. A PROCLAMATION.

(Signed) VICTORIA R.

WHEREAS by an Act of Parliament passed in the Sixty-third and Sixty-fourth Years of Our Reign intituled, "An Act to constitute the Commonwealth of *Australia*," it is enacted that it shall be lawful for the Queen, with the advice of the Privy Council, to declare by Proclamation, that, on and after a day therein appointed, not being later than One Year after the passing of this Act, the people of *New South Wales*, *Victoria*, *South Australia*, *Queensland*, and *Tasmania*, and also, if Her Majesty is satisfied that the people of *Western Australia* have agreed thereto, of *Western Australia*, shall be united in a Federal Commonwealth under the name of the Commonwealth of Australia.

And whereas We are satisfied that the people of *Western Australia* have agreed thereto accordingly.

We therefore, by and with the advice of Our Privy Council, have thought fit to issue this Our Royal Proclamation, and We do hereby declare that on and after the First day of *January* One thousand nine hundred and one, the people of *New South Wales*, *Victoria*, *South Australia*, *Queensland*, *Tasmania*, and *Western Australia* shall be united in a Federal Commonwealth under the name of the Commonwealth of *Australia*.

Given at Our Court at *Balmoral* this Seventeenth day of *September*, in the Year of Our Lord One thousand nine hundred, and in the Sixty-fourth Year of Our Reign.

GOD SAVE THE QUEEN.

§ 8. Commonwealth Legislation.

1. **The Commonwealth Parliaments.**—The first Parliament of the Commonwealth was convened by proclamation dated 29th April, 1901, by His Excellency the late Earl of Hopetoun, Governor-General. It was opened on the 9th May by H.R.H. the Duke of Cornwall and York, who had been sent to Australia for that purpose by His Majesty the King; the Rt. Hon. Sir Edmund Barton, P.C., G.C.M.G., K.C., being Prime Minister. It was dissolved on the 23rd November, 1903. The second Parliament was convened on the 2nd March, 1904, by His Excellency the Rt. Hon. Baron Northcote, G.C.M.G., G.C.I.E., C.B.; the Hon. Alfred Deakin being Prime Minister. The third session closed on the 12th October, 1906, and Parliament was dissolved on the 8th November, 1906. The third Parliament was convened on the 20th February, 1907, and met on that day and the following day only. It was prorogued on the 22nd February, the prorogation eventually extending to the 3rd July, 1907, on which day the second session commenced. The second session was prorogued on the 11th June, 1908, to the 15th July following, and

finally to the 16th September, 1908, when it met for the despatch of business; the third session commenced on that day. The third session was prorogued on the 15th December, 1908, the prorogation finally extending to the 26th May, 1909, when the fourth and last session of the third Parliament commenced. This Parliament expired by effluxion of time on 26th January, 1910. The first session of the fourth Parliament was commenced on 1st July, 1910, and was on 29th November of that year prorogued until 7th February, 1911. The Debates of these Parliaments will be found in Volumes I. to XLVIV. of the Parliamentary Debates, as follows:—

First Parliament,	1st	Session	Vols.	I.	to	XII.,	pp. 1	to 16,744
,, ,,	2nd	,,	,,	XIII.	,,	XVII.,	,, 1	,, 6,440
Second Parliament,	1st	,,	,,	XVIII.	,,	XXIV.,	,, 1	,, 8,618
,, ,,	2nd	,,	,,	XXV.	,,	XXX.,	,, 1	,, 7,461
,, ,,	3rd	,,	,,	XXXI.	,,	XXXV.,	,, 1	,, 6,491
Third Parliament,	1st	,,	,,	XXXVI.			,, 1	,, 141
,, ,,	2nd	,,	,,	XXXVI.	,,	XLVI.,	,, 1	,, 12,203
,, ,,	3rd	,,	,,	XLVII.	,,	XLVIII.,	,, 1	,, 3,180
,, ,,	4th	,,	,,	XLIX.	,,	LIV.,	,, 1	,, 7,296
Fourth Parliament,	1st	,,	,,	I.			,, 1	,, 6,893

2. **The Several Administrations.**—The following tabular statements shew the names of the several Governors-General, and the constitution of the Ministries which have directed the administration of the affairs of the Commonwealth since its creation:—

(*a*) GOVERNORS-GENERAL.

Rt. Hon. EARL OF HOPETOUN, P.C., K.T., G.C.M.G., G.C.V.O. Sworn 1st January, 1901; recalled 9th May, 1902, left Melbourne 2nd July, 1902.

Rt. Hon. HALLAM BARON TENNYSON, G.C.M.G. (Act. Governor-General). Sworn 17th July, 1902.

Rt. Hon. HALLAM BARON TENNYSON, G.C.M.G. (Governor-General). Sworn 9th January, 1903; recalled 21st January, 1904.

Rt. Hon. HENRY STAFFORD BARON NORTHCOTE, G.C.M.G., G.C.I.E., C.B. Sworn 21st January, 1904; recalled 8th September, 1908.

Rt. Hon. WILLIAM HUMBLE EARL OF DUDLEY, P.C., G.C.M.G., G.C.V.O., etc. Sworn 9th September, 1908.

(*b*) BARTON ADMINISTRATION, 1st January, 1901, to 23rd September, 1903.

DEPARTMENTS.	MINISTERS.
External Affairs	Rt. Hon. SIR EDMUND BARTON, P.C., G.C.M.G., K.C.
Attorney-General	Hon. ALFRED DEAKIN.
Home Affairs	Hon. SIR WILLIAM JOHN LYNE, K.C.M.G. (to 7/8/'03). Rt. Hon. SIR JOHN FORREST, P.C., G.C.M.G. (from 7/8/'03).
Treasury	Rt. Hon. SIR GEORGE TURNER, P.C., K.C.M.G.
Trade and Customs	Rt. Hon. CHARLES CAMERON KINGSTON, P.C., K.C. (resigned 24/7/'03. Hon. SIR WILLIAM JOHN LYNE, K.C.M.G. (from 7/8/'03).
Defence	The Hon. SIR JAMES ROBERT DICKSON, K.C.M.G. (died 10/1/'01). Rt. Hon. SIR JOHN FORREST, P.C., G.C.M.G. (7/1/'01 to 7/8/'03). Hon. JAMES GEORGE DRAKE (from 7/8/'03).
Postmaster-General	Rt. Hon. SIR JOHN FORREST, P.C., G.C.M.G. (to 17/1/'01). Hon. JAMES GEORGE DRAKE (5/2/'01 to 7/8/'03). Hon. SIR PHILIP OAKLEY FYSH, K.C.M.G. (from 7/8/'03).
Vice-President Executive C'ncil	Hon. RICHARD EDWARD O'CONNOR, K.C.
Without Portfolio	Hon. N. E. LEWIS (to 23/4/'01). Hon. SIR PHILIP OAKLEY FYSH, K.C.M.G. (26/4/'01 to 7/8/'03).

(*c*) DEAKIN ADMINISTRATION, 24th September, 1903, to 26th April, 1904.

DEPARTMENTS.	MINISTERS.
External Affairs	Hon. ALFRED DEAKIN.
Trade and Customs	Hon. SIR WILLIAM JOHN LYNE, K.C.M.G.
Treasury	Rt. Hon. SIR GEORGE TURNER, P.C., K.C.M.G.
Home Affairs	Rt. Hon. SIR JOHN FORREST, P.C., G.C.M.G.
Attorney-General	Hon. JAMES GEORGE DRAKE.
Postmaster-General	Hon. SIR PHILIP OAKLEY FYSH, K.C.M.G.
Defence	Hon. AUSTIN CHAPMAN.
Vice-President Executive C'ncil	Hon. THOMAS PLAYFORD.

(*d*) WATSON ADMINISTRATION, 27th April to 17th August, 1904.

DEPARTMENTS.	MINISTERS.
Treasurer	Hon. JOHN CHRISTIAN WATSON.
External Affairs	Hon. WILLIAM MORRIS HUGHES.
Attorney-General	Hon. HENRY BOURNES HIGGINS, K.C.
Home Affairs	Hon. EGERTON LEE BATCHELOR.
Trade and Customs	Hon. ANDREW FISHER.
Defence	Hon. ANDERSON DAWSON.
Postmaster-General	Hon. HUGH MAHON.
Vice-President Executive C'ncil	Hon. GREGOR MCGREGOR.

(*e*) REID-MCLEAN ADMINISTRATION, 18th August, 1904, to 4th July, 1905.

DEPARTMENTS.	MINISTERS
External Affairs	Rt. Hon. GEORGE HOUSTOUN REID, P.C., K.C.
Trade and Customs	Hon. ALLAN MCLEAN.
Attorney-General	Hon. SIR JOSIAH HENRY SYMON, K.C.M.G., K.C
Treasury	Rt. Hon. SIR GEORGE TURNER, P.C., K.C.M.G.
Home Affairs	Hon. DUGALD THOMSON.
Defence	Hon. JAMES WHITESIDE MCCAY.
Postmaster-General	HON. SYDNEY SMITH
Vice-President Executive C'ncil	Hon. JAMES GEORGE DRAKE.

(*f*) SECOND DEAKIN ADMINISTRATION, 5th July, 1905, to 12th November, 1908.

DEPARTMENTS.	MINISTERS.
External Affairs	Hon. ALFRED DEAKIN.
Attorney-General	Hon. ISAAC ALFRED ISAACS, K.C. (to 11/10/'06). Hon. LITTLETON ERNEST GROOM (from 12/10/'06).
Trade and Customs	Hon. SIR WILLIAM JOHN LYNE, K.C.M.G. (to 29/7/'07). Hon. AUSTIN CHAPMAN (from 30/7/'07).
Treasurer	Rt. Hon. SIR JOHN FORREST, P.C., G.C.M.G. (to 29/7/'07). Hon. SIR WILLIAM JOHN LYNE (from 30/7/'07).
Postmaster-General	Hon. AUSTIN CHAPMAN (to 29/7/'07). Hon. SAMUEL MAUGER (from 30/7/'07).
Defence	Hon. THOMAS PLAYFORD (to 23/1/'07). Hon. THOMAS THOMSON EWING (from 24/1/'07).
Home Affairs	Hon. LITTLETON ERNEST GROOM (to 11/10/'06). Hon. THOMAS THOMSON EWING (from 12/10/'06 to 23/1/'07). Hon. JOHN HENRY KEATING (from 24/1/'07).
Vice-President Executive C'ncil	Hon. THOMAS THOMSON EWING (to 11/10/'06). Hon. JOHN HENRY KEATING (from 12/10/'06 to 19/2/'07). Hon. ROBERT WALLACE BEST (from 20/2/'07).
Honorary Minister	Hon. J. H. KEATING (from 5/7/'05 to 11/10/'06). Hon. S. MAUGER (from 12/10/'06 to 29/7/'07). Hon. J. HUME COOK (from 28/1/08).

(*g*) FISHER ADMINISTRATION, 13th November, 1908, to 2nd June, 1909.

DEPARTMENTS.	MINISTERS.
Treasurer	Hon. ANDREW FISHER.
Attorney-General	Hon. WILLIAM MORRIS HUGHES.
External Affairs	Hon. EGERTON LEE BATCHELOR.
Home Affairs	Hon. HUGH MAHON.
Postmaster-General	Hon. JOSIAH THOMAS.
Defence	Hon. GEORGE FOSTER PEARCE.
Trade and Customs	Hon. FRANK GWYNNE TUDOR.
Vice-President Executive C'ncil	Hon. GREGOR MCGREGOR.
Honorary Minister	Hon. JAMES HUTCHINSON.

(*h*) DEAKIN-COOK ADMINISTRATION, 2nd June, 1909, to 29th April, 1910.

DEPARTMENTS.	MINISTERS.
Prime Minister (without P'tfolio)	Hon. ALFRED DEAKIN.
Defence	Hon. JOSEPH COOK.
Treasurer	Rt. Hon. SIR JOHN FORREST, P.C., G.C.M.G.
Trade and Customs	Hon. SIR ROBERT WALLACE BEST, K.C.M.G.
External Affairs	Hon. LITTLETON ERNEST GROOM.
Attorney-General	Hon. PATRICK MCMAHON GLYNN.
Postmaster-General	Hon. SIR JOHN QUICK.
Home Affairs	Hon. GEORGE WARBURTON FULLER.
Vice-President Executive C'ncil	Hon. EDWARD DAVIS MILLEN.
Honorary Minister	Colonel The Hon. JUSTIN FOX GREENLAW FOXTON, C.M.G.

(*i*) SECOND FISHER ADMINISTRATION, 29th April, 1910.

DEPARTMENTS.	MINISTERS.
Prime Minister and Treasurer	Hon. ANDREW FISHER.
Attorney-General	Hon. WILLIAM MORRIS HUGHES.
External Affairs	Hon. EGERTON LEE BATCHELOR.
Postmaster-General	Hon. JOSIAH THOMAS.
Defence	Hon. GEORGE FOSTER PEARCE.
Trade and Customs	Hon. FRANK GWYNNE TUDOR.
Home Affairs	Hon. KING O'MALLEY.
Vice-President Executive C'ncil	Hon. GREGOR MCGREGOR.
Honorary Ministers	Hon. EDWARD FINDLEY. Hon. CHARLES EDWARD FRAZER.

A further list of the Ministers of State for the Commonwealth, arranged according to the respective offices occupied, is given in the section of this book dealing with the subject of *General Government* (see Section XXV.).

3. **The Course of Legislation.**—The actual legislation by the Commonwealth Parliament up to the end of the 1909 session is indicated in alphabetical order in "Vol. 8 of the Acts of the Parliament of the Commonwealth of Australia, passed in the session of 1909, with Tables, Appendices and Indexes." A "Chronological Table of Acts passed from 1901 to 1909, shewing how they are affected by subsequent legislation or lapse of time" is also given, and further "A Table of Commonwealth Legislation," for the same period, "in relation to the several provisions of the Constitution," is furnished. Reference may be made to these for complete information. The nature of Commonwealth legislation, up to December, 1910, and its relation to the several provisions of the Constitution, are set forth in the following tabular statement :—

ANALYTIC TABLE OF COMMONWEALTH LEGISLATION.

FROM 1901 TO DECEMBER, 1910, IN RELATION TO THE SEVERAL PROVISIONS OF THE CONSTITUTION.[1]

Section of Constitution.	Short Title of Commonwealth Act.*
	AMENDMENT OF THE CONSTITUTION.
	Constitution Alteration (Senate Elections) 1906.
	Constitution Alteration (State Debts) 1909.
	PARLIAMENTARY AND ELECTORAL LAW.
8—30	PARLIAMENTARY FRANCHISE—
	Commonwealth Franchise Act 1902.
9—34	ELECTIONS—
	Commonwealth Electoral Acts 1902-1909.
	Senate Elections Act 1903.
24	DETERMINATION OF NUMBER OF MEMBERS OF HOUSE OF REPRESENTATIVES—
	Representation Act 1905.
47	DISPUTED ELECTIONS AND QUALIFICATIONS—
	Commonwealth Electoral Acts 1902-1909, Part XVI.
	Disputed Elections and Qualifications Act 1907.
48	ALLOWANCES TO MEMBERS—
	*Parliamentary Allowances Act 1902.**
	Parliamentary Allowances Act 1907.
49	PRIVILEGES OF PARLIAMENT—
	Parliamentary Papers Act 1908.
	GENERAL LEGISLATION.
51—(i.)	TRADE AND COMMERCE—EXTERNAL AND INTERSTATE—
	Sea Carriage of Goods Act 1904 [*Bills of Lading*].
	Secret Commissions Act 1905.
	Commerce (Trade Descriptions) Act 1905 [*Merchandise Marks*].
	Australian Industries Preservation Act 1906-1910 [*Trusts and Dumping*].
	Spirits Act 1906.
	Seamen's Compensation Act 1909.
	Customs (Inter State Accounts) Act 1910.
	Northern Territory Acceptance Act 1910 (s. 13).
(ii.)	TAXATION—
	Machinery Acts—
	Customs Act 1901-1910.
	Beer Excise Act 1901.
	Distillation Act 1901.
	Excise Act 1901.
	Spirits Act 1906.
	Excise Procedure Act 1907.
	Australian Notes Act 1910 (s. 12).
	Land Tax Assessment Act 1910.
	Taxing Acts—
	*Customs Tariff 1902.**
	Customs Tariff 1906 [*Agricultural Machinery*].*
	Customs Tariff (South African Preference) 1906; *amended by* Customs Tariff 1908 (s. 9).
	Customs Tariff 1908; *amended by* Customs Tariff Amendment 1908, and Customs Tariff 1910.
	Excise Tariff 1902; *amended by* Sugar Rebate Abolition Act 1903, Excise Tariff 1905, Excise Tariff (Amendment) 1906, Excise Tariff 1908; and Excise (Sugar) Act 1910.
	Excise Tariff 1906 [*Agricultural Machinery*].
	Excise Tariff 1906 [*Spirits*].
	Excise Tariff 1908; *amended by* Excise Tariff (Starch) 1908.
	Bank Notes Tax Act 1910.
	Land Tax Act 1910.

1. This Table has been prepared by the Secretary of the Attorney-General's Department, Robert Randolph Garran, Esquire, M.A., C.M.G., Barrister-at-Law, etc.

* Acts whose short titles are printed in italics with a * have been repealed or have expired.

Section of Constitution.	Short Title of Commonwealth Act.*
51—(iii.)	BOUNTIES ON PRODUCTION OR EXPORT—
	Sugar Bounty Act 1903.
	Sugar Bounty Act 1905.
	Bounties Act 1907.
	Manufactures Encouragement Act 1908.
	Sugar Bounty Act 1910.
	Shale Oils Bounties Act 1910.
(v.)	POSTAL, TELEGRAPHIC, AND TELEPHONIC SERVICES—
	Post and Telegraph Act 1901-1910.
	Post and Telegraph Rates Act 1902.
	Wireless Telegraphy Act 1905.
	Tasmanian Cable Rates Act 1906.
	Telegraph Act 1909.
	Postal Rates Act 1910.
(vi.)	NAVAL AND MILITARY DEFENCE—
	Naval Agreement Act 1903.
	Defence Act 1903-1910.
	Telegraph Act 1909.
	Naval Defence Act 1910.
(viii.)	ASTRONOMICAL AND METEOROLOGICAL OBSERVATIONS—
	Meteorology Act 1906.
(ix.)	QUARANTINE—
	Quarantine Act 1908.
(xi.)	CENSUS AND STATISTICS—
	Census and Statistics Act 1905.
(xii.)	CURRENCY, COINAGE, AND LEGAL TENDER—
	Coinage Act 1909.
	Australian Notes Act 1910.
(xiv.)	INSURANCE—
	Life Assurance Companies Act 1905.
	Marine Insurance Act 1909.
(xvi.)	BILLS OF EXCHANGE AND PROMISSORY NOTES—
	Bills of Exchange Act 1909.
(xviii.)	COPYRIGHT, PATENTS, DESIGNS, AND TRADE MARKS—
	Customs Act 1901-1910 (s. 52 (a), 57).
	Patents Act 1903-1909.
	Trade Marks Act 1905.
	Copyright Act 1905.
	Designs Act 1906.
	Patents, Trade Marks and Designs Act 1910.
(xix.)	NATURALIZATION AND ALIENS—
	Naturalization Act 1903.
(xxiii.)	INVALID AND OLD-AGE PENSIONS—
	Invalid and Old-age Pensions Act 1908-1909.
(xxiv.)	SERVICE AND EXECUTION THROUGHOUT COMMONWEALTH OF PROCESS AND JUDGMENTS OF STATE COURTS—
	Service and Execution of Process Acts 1901-1905.
(xxv.)	RECOGNITION OF STATE LAWS, RECORDS, ETC.—
	State Laws and Records Recognition Act 1901.
(xxvi.)	PEOPLE OF ANY RACE, OTHER THAN ABORIGINAL—SPECIAL LAWS—
	Pacific Island Labourers Act 1901-1906.
	Commonwealth Franchise Act 1902 (s. 4).
	Naturalization Act 1903 (s. 5).
(xxvii.)	IMMIGRATION AND EMIGRATION—
	Immigration Restriction Act 1901-1910.
	Pacific Island Labourers Act 1901-1906.
	Contract Immigrants Act 1905.
	Emigration Act 1910.
(xxix.)	EXTERNAL AFFAIRS—
	Extradition Act 1903.
	High Commissioner Act 1909.

*Acts whose short titles are printed in italics with a * have been repealed or have expired.

Section of Constitution.	Short Title of Commonwealth Act.*
51—(xxx.)	RELATIONS WITH PACIFIC ISLANDS—
	Pacific Island Labourers Act 1901-1906.
(xxxi.)	ACQUISITION OF PROPERTY FOR PUBLIC PURPOSES—
	*Property for Public Purposes Acquisition Act 1901.**
	*Seat of Government Act 1904.**
	Lands Acquisition Act 1906.
	Seat of Government Act 1908.
	Seat of Government Acceptance Act 1909.
	Seat of Government (Administration) Act 1910 (s. 10).
	Northern Territory (Administration) Act 1910.
(xxxii.)	CONTROL OF RAILWAYS FOR DEFENCE PURPOSES—
	Defence Act 1903-1910 (ss. 64-66, 80, 124).
(xxxv.)	CONCILIATION AND ARBITRATION FOR THE PREVENTION AND SETTLEMENT OF INDUSTRIAL DISPUTES EXTENDING BEYOND THE LIMITS OF ANY ONE STATE—
	Commonwealth Conciliation and Arbitration Act 1904-1910.
(xxxix.)	MATTERS INCIDENTAL TO THE EXECUTION OF POWERS—
	Acts Interpretation Act 1901.
	*Punishment of Offences Act 1901.**
	Acts Interpretation Act 1904.
	Amendments Incorporation Act 1905.
	Rules Publication Act 1903.
	Commonwealth Public Service Act 1902-1909.
	Jury Exemption Act 1905.
	Royal Commissions Act 1902.
	Evidence Act 1905.
	Commonwealth Salaries Act 1907.
	Excise Procedure Act 1907.
	EXECUTIVE GOVERNMENT.
67	APPOINTMENT AND REMOVAL OF OFFICERS—
	Commonwealth Public Service Act 1902-1909.
	Papua Act 1905 (s. 19).
	Defence Act 1909 (s. 13).
	High Commissioner Act 1909 (ss. 8, 9).
	Northern Territory Acceptance Act 1910 (ss. 11, 12).
	THE JUDICATURE.
71—80	CONSTITUTION AND PROCEDURE OF THE HIGH COURT—
	Judiciary Act 1903-1910.
	High Court Procedure Act 1903, *amended by* High Court Procedure Amendment Act 1903.
73	APPELLATE JURISDICTION OF THE HIGH COURT—
	Judiciary Act 1903-1910.
	Papua Act 1905 (s. 43).
76	ORIGINAL JURISDICTION OF HIGH COURT—
(i.)	(1) *In matters arising under the Constitution or involving its interpretation*
	Judiciary Act 1903-1910 (s. 30).
(ii.)	(2) *In matters arising under Laws made by the Parliament*—
	Customs Act 1901-1910 (ss. 221, 227, 245).
	Excise Act 1901 (ss. 109, 115, 134).
	Post and Telegraph Act 1901-1910 (ss. 29, 43).
	*Property for Public Purposes Acquisition Act 1901** (ss. 12-17, 25, 52, 55b, 58).
	Commonwealth Electoral Act 1902-1909 (ss. 193, 206aa).
	Defence Act 1903-1909 (s. 91).
	Patents Act 1903-1909 (ss. 47, 58, 67, 75-77, 84-87a, 111).
	Commonwealth Conciliation and Arbitration Act 1904-1910 (s. 31).
	Trade Marks Act 1905 (ss. 34, 35, 44, 45, 70-72, 95).
	Australian Industries Preservation Act 1906-1910 (ss. 10, 11, 13, 21, 22, 26).

* Acts whose short titles are printed in italics with a * have been repealed or have expired.

Section of Constitution.	Short Title of Commonwealth Act.*
	Original Jurisdiction of High Court (continued)—
	Referendum (Constitution Alteration) Act 1906 (ss. 27, 31).
	Lands Acquisition Act 1906 (ss. 10, 11, 24, 36-39, 45, 46, 50, 54, 56, 59).
	Disputed Elections and Qualifications Act 1907 (ss. 2, 6).
77—(ii.)	EXCLUDING JURISDICTION OF STATE COURTS—
	Judiciary Act 1903-1910 (ss. 38, 38A, 39, 57, 59).
(iii.	INVESTING STATE COURTS WITH FEDERAL JURISDICTION—
	Customs Act 1901-1910 (ss. 221, 227, 245).
	Excise Act 1901 (ss. 109, 115, 134).
	Post and Telegraph Act 1901-1910 (ss. 29, 43).
	*Punishment of Offences Act 1901.**
	Commonwealth Electoral Act 1902 (s. 193).
	*Claims against the Commonwealth Act 1902.**
	Defence Act 1903-1910 (s. 91).
	Judiciary Act 1903-1910 (ss. 17, 39, 68).
	Patents Act 1903-1909 (ss. 30, 47, 58, 67, 75-77, 84-87a, 111).
	Trade Marks Act 1905 (ss. 34, 35, 44, 45).
	Copyright Act 1905 (s. 60, 73).
	Designs Act 1906 (s. 25, 39).
78	RIGHT TO PROCEED AGAINST COMMONWEALTH OR STATE—
	Judiciary Act 1903-1910 (ss. 56-67).
	FINANCE.
81	APPROPRIATION OF MONEYS—
	Appropriation and Supply Acts 1901-1910.
	Audit Act 1901-1909 (ss. 36-37, 62a).
83	PAYMENT OF MONEYS—
	Audit Act 1901-1909 (ss. 31-37, 62a).
93	CREDITING OF REVENUE AND DEBITING OF EXPENDITURE—
	Surplus Revenue Act 1908.
	Surplus Revenue Act 1909.
94	DISTRIBUTION OF SURPLUS REVENUE—
	Surplus Revenue Act 1908.
	Surplus Revenue Act 1909.
	Surplus Revenue Act 1910.
97	AUDIT OF PUBLIC ACCOUNTS—
	Audit Act 1901-1909.
	THE STATES.
118	RECOGNITION OF STATE LAWS, RECORDS, ETC.—
	State Laws and Records Recognition Act 1901.
119	PROTECTION OF STATES FROM INVASION AND VIOLENCE—
	Defence Act 1903-1910 (s. 51).
	TERRITORIES.
122	GOVERNMENT OF TERRITORIES—
	Papua Act 1905.
	Wireless Telegraphy Act 1905.
	Seat of Government Acceptance Act 1909
	Patents Act 1903-1909 (s. 4a).
	Northern Territory Acceptance Act 1910.
	Seat of Government (Administration) Act 1910.
	Northern Territory (Administration) Act 1910.
	MISCELLANEOUS.
125	SEAT OF GOVERNMENT—
	Seat of Government Act 1904.*
	Seat of Government Act 1908.
	Seat of Government Acceptance Act 1909.
	Seat of Government (Administration) Act 1910.
128	ALTERATION OF CONSTITUTION—
	Referendum (Constitution Alteration) Act 1906-1910.
	Constitution Alteration (Senate Elections) Act 1906.
	Constitution Alteration (State Debts) Act 1909.

* Acts whose short titles are printed in italics with a * have been repealed or have expired.

SECTION III.

PHYSIOGRAPHY.

§ 1. General Description of Australia.

1. **Geographical Position.**—The Australian Commonwealth includes Australia proper lying in the Southern Hemisphere, an island continent, and Tasmania, in all an area of about 2,974,581 square miles, the mainland alone containing about 2,948,366 square miles. Bounded on the west and east by the Indian and Pacific Oceans respectively, it lies between longitudes 113° 9′ E. and 153° 39′ E., while its northern and southern limits are the parallels of latitude 10° 41′ S. and 39° 8′ S., or including Tasmania, 43° 39′ S. On its north are the Timor and Arafura Seas and Torres Strait, on its south the Southern Ocean and Bass Strait.[1]

(i.) *Tropical and Temperate Regions.* Of the total area of Australia the lesser portion lies within the tropics. Assuming, as is usual, that the latitude of the Tropic of Capricorn is 23° 30′ S.[2], the areas within the tropical and temperate zones are approximately as follows :—

AREAS OF TROPICAL AND TEMPERATE REGIONS
OF STATES WITHIN TROPICS.

Areas.	Queensland.	Northern Territory.	Western Australia.	Total.
	Sq. miles.	Sq. miles.	Sq. miles.	Sq. miles.
Within Tropical Zone	359,000	426,320	364,000	1,149,320
Within Temperate Zone	311,500	97,300	611,920	1,020,720
Ratio of Tropical part to whole State	0.535	0.814	0.373	0.530
Ratio of Temperate part to whole State ...	0.465	0.186	0.627	0.470

Thus the tropical part is roughly about one-half (0.530) of the three territories mentioned above, or about five-thirteenths of the whole Commonwealth (0.386). See hereafter Meteorology 9.

2. **Area of Australia compared with that of other Countries.**—That the area of Australia is greater than that of the United States of America, that it is four-fifths of that of Canada, that it is more than one-fourth of the area of the whole of the British Empire, that it is nearly three-fourths of the whole area of Europe, that it is about 25 times as large as any one of the following, viz., the United Kingdom, Hungary, Norway, Italy, the Transvaal, and Ecuador, are facts which are not always adequately realised. It is this great size, taken together with the fact of the limited population, that gives to the problems of Australian development their unique character, and its clear comprehension is essential in any attempt to understand those problems.

1. The extreme points are "Steep Point" on the west, "Cape Byron" on the east, "Cape York" on the north, "Wilson's Promontory" on the south, or, if Tasmania be included, "South East Cape." The limits, according to the 1903-4 edition of "A Statistical Account of Australia and New Zealand," p. 2, and, according to Volume XXV. of the "Encyclopædia Britannica," p. 787, are respectively 113° 5′ E., 153° 16′ E., 10° 39′ S., and 39° 11½′ S., but these figures are obviously defective.

2. Its correct value for 1910.0 is 23° 27′ 3″.58, and it decreases about 0″.47 per annum.

The relative magnitudes may be appreciated by a reference to the following table, which shews how large Australia is compared with the countries referred to, or *vice versa*. Thus, to take line 1, we see that Europe is about $1\frac{3}{10}$ times (1.29775) as large as Australia, or that Australia is about three-quarters (more accurately 0.77) of the area of Europe.

SIZE OF AUSTRALIA

IN COMPARISON WITH THAT OF OTHER COUNTRIES.

Commonwealth of Australia ... 2,974,581 square miles.

Country.	Area.	Australian Commonw'lth in comparison with—	In comparison with Australian C'wealth.
Continents—	Sq. miles.		
Europe	3,860,269	0.77	1.29775
Asia	16,970,491	0.18	5.70517
Africa	10,423,869	0.29	3.50432
North and Central America and West Indies	8,554,490	0.35	2.87586
South America	7,343,561	0.41	2.46877
Australasia and Polynesia	3,459,618	0.86	1.16306
Total, exclusive of Arctic and Antarctic Conts.	50,612,298	0.06	17.01497
Europe—			
Russia (inclusive of Poland, Ciscaucasia & Finland)	2,122,527	1.40	0.71355
Austria-Hungary (incl. of Bosnia & Herzegovina)	261,035	11.39	0.08776
Germany	208,780	14.25	0.07011
France	207,054	14.37	0.06969
Spain	194,770	15.27	0.06548
Sweden	172,876	17.21	0.05812
Norway	124,130	23.96	0.04173
United Kingdom	121,391	24.50	0.04081
Italy	110,659	26.88	0.03720
Turkey (inclusive of Crete)	68,715	43.29	0.02310
Denmark (inclusive of Iceland)	55,348	53.73	0.01861
Rumania	50,720	58.65	0.01705
Bulgaria	38,080	78.11	0.01280
Portugal	35,490	83.82	0.01193
Greece	25,014	118.91	0.00841
Servia	18,650	159.49	0.00627
Switzerland	15,976	186.22	0.00537
Netherlands	12,648	235.29	0.00425
Belgium	11,373	261.78	0.00382
Montenegro	3,630	819.67	0.00122
Luxemburg	998	2941.18	0.00034
Andorra	175	16997.61	0.00006
Malta	117	25423.76	0.00004
Liechtenstein	65	45793.55	0.00002
San Marino	38	78278.45	0.00001
Monaco	8	371822.63	...
Gibraltar	2	1487290.50	...
Total, Europe	3,860,269	0.77	1.29775
Asia—			
Russia (inclusive of Transcausia, Siberia, Steppes, Transcaspia, Turkestan and inland waters)	6,525,130	0.45	2.19364
China and Dependencies	4,277,170	0.70	1.43791
British India	1,097,821	2.71	0.36906
Independent Arabia	966,700	3.08	0.32499
Turkey (including Samos)	693,790	4.29	0.23324
Feudatory Indian States	675,267	4.41	0.22701
Persia	628,000	4.74	0.21112

Country.	Area.	Australian Commonwe'lth in comparison with—	In comparison with Australian C'wealth.
ASIA (continued)—	Sq. Miles.		
Dutch East Indies	584,611	5.09	0.19654
Afghanistan	250,000	11.90	0.08405
Siam	195,000	15.25	0.06555
Japan (inclusive of Formosa, Pescadores, and Southern Sakhalin)	174,919	17.01	0.05880
Philippine Islands (inclusive of Sulu Archipelago)	127,853	23.27	0.04298
Laos	98,000	30.35	0.03295
Korea	86,000	34.59	0.02891
British Borneo and Sarawak	83,106	35.79	0.02794
Bokhara	83,000	35.83	0.02790
Omán	82,000	36.27	0.02757
Nepál	54,000	55.10	0.01815
Annam	52,100	57.08	0.01752
Tonking	46,400	64.10	0.01560
Cambodia	45,000	66.10	0.01513
Federated Malay States	26,380	112.74	0.00887
Ceylon	25,332	117.37	0.00852
Khiva	24,000	123.94	0.00807
Cochin China...	20,000	148.73	0.00672
Bhután	20,000	148.73	0.00672
Aden and Dependencies	9,005	330.32	0.00303
Timor, etc.	7,330	406.50	0.00246
Cyprus	3,584	833.33	0.00120
Brunei	3,000	991.53	0.00101
Goa, Damaõ, and Diu	1,638	1818.18	0.00055
Straits Settlements	1,600	1851.85	0.00054
Sokotra and Kuria Muria Islands	1,382	2152.22	0.00046
Hong Kong and Dependencies	390	7692.31	0.00013
Wei-hai-wei	285	10623.50	0.00009
Bahrein Islands	250	11898.32	0.00008
Kiauchau	200	14872.91	0.00007
French India (Pondicherry, etc.)	196	15176.43	0.00007
Labuan	30	99152.70	0.00001
Italian Concession, Tientsin	18	165254.50	0.00001
Macao, etc.	4	743643.25	...
Total, Asia	16,970,491	0.18	5.70517
Africa—			
Turkey (inclusive of Egypt and Soudan) ...	1,748,900	1.70	0.58796
French Sahara	1,544,000	1.93	0.51907
Congo Independent State	909,654	3.27	0.30582
French Congo	669,000	4.46	0.22491
Angola	484,800	6.14	0.16298
Rhodesia	439,575	6.77	0.14778
German East Africa	384,000	7.74	0.12909
Algeria	343,500	8.66	0.11548
German South-west Africa	322,450	9.23	0.10840
Portuguese East Africa	293,400	10.14	0.09864
Cape Colony	276,995	10.74	0.09312
Bechuanaland Protectorate	275,000	10.82	0.09245
Northern Nigeria Protectorate	256,400	11.60	0.08620
Madagascar and adjacent Islands	228,000	13.05	0.07665
Morocco	219,000	13.58	0.07362
Abyssinia	200,000	14.87	0.06724
British East Africa Protectorate	200,000	14.87	0.06724
Kamerun	191,130	15.56	0.06425
Ivory Coast	130,000	22.87	0.04370
Italian Somaliland	129,700	22.93	0.04360

Country.	Area.	Australian Commonw'lth in comparison with—	In comparison with Australian C'wealth.
AFRICA (continued)—	Sq. miles		
Gold Coast Protectorate ...	119,260	24.94	0.04009
Transvaal ...	116,962	25.43	0.03932
Uganda Protectorate ...	117,681	25.27	0.03956
French Guinea ...	95,000	31.31	0.03194
Southern Nigeria and Protectorate ...	77,260	38.51	0.02597
Senegambia and Niger ...	70,000	42.49	0.02353
Rio de Oro, etc. ...	70,000	42.49	0.02353
British Somaliland ...	68,000	43.74	0.02286
Dahomey ...	65,000	45.77	0.02185
Orange River Colony ...	50,392	59.03	0.01694
Tunis ...	50,000	59.49	0.01681
Eritrea ...	45,800	64.95	0.01540
Nyasaland Protectorate ...	43,608	68.21	0.01466
Liberia ...	40,000	74.36	0.01345
Natal ...	35,371	84.10	0.01189
Togoland ...	33,700	88.26	0.01133
Sierra Leone and Protectorate ...	30,000	99.11	0.01009
Portuguese Guinea ...	13,940	213.22	0.00469
Basutoland ...	10,293	289.02	0.00346
Rio Muni, etc. ...	9,800	303.95	0.00329
French Somali Coast, etc. ...	5,790	513.74	0.00194
Gambia Protectorate ...	3,615	819.67	0.00121
Cape Verde Islands ...	1,480	2000.00	0.00050
Zanzibar ...	1,020	2941.18	0.00034
Réunion ...	965	3082.46	0.00032
Mauritius and Dependencies ...	835	3562.37	0.00028
Fernando Po, etc. ...	780	3846.15	0.00026
Comoro Islands ...	620	4761.91	0.00021
French Senegal ...	438	6791.28	0.00015
St. Thomas and Prince Islands ...	360	8262.73	0.00012
Seychelles ...	160	19830.54	0.00005
Mayotte, etc....	140	21247.01	0.00005
St. Helena ...	47	63288.95	0.00002
Ascension ...	35	84988.03	0.00001
Spanish North and West Africa ...	13	228813.92	...
Total, Africa ...	10,423,869	0.29	3.50432
North and Central America and West Indies—			
Canada ...	3,745,574	0.79	1.25919
United States ...	2,974,159	1.00	0.99985
Mexico ...	767,005	3.88	0.25785
Alaska ...	590,884	5.03	0.19864
Newfoundland and Labrador ...	162,734	18.28	0.05471
Nicaragua ...	49,200	60.46	0.01654
Guatemala ...	48,290	61.61	0.01623
Greenland ...	46,740	63.65	0.01571
Honduras ...	46,250	64.31	0.01555
Cuba ...	44,000	67.61	0.01479
Costa Rica ...	18,400	161.55	0.00619
San Domingo ...	18,045	164.74	0.00607
Haiti ...	10,204	291.55	0.00343
British Honduras ...	7,562	393.70	0.00254
Salvador ...	7,225	411.52	0.00243
Bahamas ...	5,450	545.79	0.00183
Jamaica ...	4,200	708.23	0.00141
Porto Rico ...	3,435	869.57	0.00115
Trinidad and Tobago ...	1,868	1592.39	0.00063
Leeward Islands ...	701	4243.33	0.00024
Guadeloupe ...	688	4323.52	0.00023
Windward Islands ...	672	4426.46	0.00023

Country.	Area.	Australian Commonwe'lth in comparison with—	In comparison with Australian C'wealth.
N. & C. AMERICA & W. INDIES (continued)—	Sq. miles.		
Curaçao and Dependencies	403	7381.09	0.00014
Martinique	381	7807.30	0.00013
Turks and Caicos Islands	169	17601.07	0.00006
Danish West Indies	138	21554.94	0.00005
St. Pierre and Miquelon	93	31984.74	0.00003
Bermudas	20	148729.05	0.00001
Total, N. and C. America and W. Indies ...	8,554,490	0.35	2.87586
South America—			
Brazil (inclusive of Acré)...	3,292,991	0.90	1.10704
Argentine Republic	1,135,840	2.62	0.38185
Peru	695,733	4.28	0.23389
Bolivia	605,400	4.91	0.20352
Colombia	435,100	6.84	0.14627
Venezuela	393,870	7.55	0.13241
Chile	292,580	10.17	0.09836
Ecuador	116,000	25.64	0.03900
Paraguay	98,000	30.35	0.03295
British Guiana	90,277	32.95	0.03035
Uruguay	72,210	41.19	0.02428
Dutch Guiana	46,060	64.60	0.01548
Panamá	31,500	94.43	0.01059
French Guiana	30,500	97.56	0.01025
Falkland Islands	6,500	456.62	0.00219
South Georgia	1,000	2974.58	0.00034
Total, South America	7,343,561	0.41	2.46877
Australasia and Polynesia—			
Commonwealth of Australia	2,974,581	1.00	1.00000
Dutch New Guinea	151,789	19.60	0.05103
New Zealand and Dependencies	104,751	28.39	0.03522
Papua	90,540	32.85	0.03044
German New Guinea	70,000	42.50	0.02353
Bismarck Archipelago	20,000	148.73	0.00672
British Solomon Islands	12,000	247.88	0.00403
New Caledonia and Dependencies	8,548	347.99	0.00287
Fiji	7,435	400.08	0.00250
Hawaii	6,449	460.83	0.00217
New Hebrides	5,000	594.92	0.00168
German Solomon Islands	4,200	709.22	0.00141
French Establishments in Oceania	1,520	1960.78	0.00051
German Samoa	1,000	2974.58	0.00034
Caroline and Pelew Islands	560	5311.75	0.00019
Tonga	390	7627.13	0.00013
Marianne Islands	250	11898.32	0.00008
Guam	200	14872.91	0.00007
Gilbert Islands	166	17919.16	0.00006
Marshall Islands	150	19830.54	0.00005
Samoa (U.S.A. part)	79	37652.92	0.00003
Norfolk Island	10	297458.10	...
Total, Australasia and Polynesia ...	3,459,618	0.86	1.16306
British Empire...	11,467,294	0.26	3.85510

3. **Relative Size of Political Subdivisions.**—As already stated, Australia is divided into six States, the areas of which, in relation to one another and to the total of Australia, are shewn in the following table :—

RELATIVE SIZES OF STATES AND COMMONWEALTH.

State.	Area.	Ratio which the Area of each State bears to that of other States and Commonwealth.						
		N.S.W.	Victoria.	Q'land.	S.A. (Total.)	W. Aust.	Tas.	C'wlth.
	Sq. miles.							
N.S.W. ...	310,372	1.000	3.532	0.463	0.344	0.518	11.840	0.104
Victoria ...	87,884	0.283	1.000	0.131	0.097	0.090	3.352	0.030
Queensland	670,500	2.160	7.629	1.000	0.742	0.687	25.577	0.225
S.A. (total)	903,690	2.912	10.283	1.348	1.000	0.926	34.472	0.304
S.A. (proper)	(380,070)	(1.225)	(4.325)	(0.567)	(0.421)	(0.389)	(14.498)	(0.128)
N. Terr. ...	(523,620)	(1.687)	(5.958)	(0.781)	(0.579)	(0.537)	(19.974)	(0.176)
W. Aust. ...	975,920	3.144	11.105	1.455	1.080	1.000	37.228	0.328
Tasmania ...	26,215	0.085	0.298	0.039	0.029	0.027	1.000	0.009
Total ...	2,974,581	9.584	33.847	4.436	3.292	3.048	113.469	1.000

Thus, looking at the top line, New South Wales is seen to be over three-and-a-half times as large as Victoria (3.532) and less than one-half the size of Queensland (0.463); or again, looking at the bottom line, the Commonwealth is shewn to be more than nine-and-a-half times as large as New South Wales (9.584), and nearly thirty-four times as large as Victoria (33.847).

These relative magnitudes are shewn in the small diagram below. It may be added that Papua (or British New Guinea), with its area of 90,540 square miles, is 0.030 of the area of the Commonwealth.



4. **Coastal Configuration.**—There are no striking features in the configuration of the coast: the most remarkable indentations are the Gulf of Carpentaria on the north and the Great Australian Bight on the south. The York Peninsula on the extreme north is the only other remarkable feature in the outline. In Year Book No. 1 an enumeration of the features of the coast-line of Australia was given (see pp. 60 to 68).

(i.) *Coast-line.* The lengths of coast-line, exclusive of minor indentations, both of each State and of the whole continent, are shewn in the following table:—

SQUARE MILES OF TERRITORY PER MILE OF COAST-LINE.

STATES AND CONTINENT.

State.	Coast-line.	Area ÷ Coast-line.	State.	Coast-line.	Area ÷ Coast-line.
	Miles.	Sq. miles.		Miles.	Sq. miles.
New South Wales...	700	443	South Australia ...	1,540	247
Victoria	680	129	Western Australia	4,350	224
Queensland ...	3,000	223	Continent[1] ...	11,310	261
Northern Territory	1,040	503	Tasmania ...	900	29

1 Area 2,948,366 square miles.

For the entire Commonwealth this gives a coast-line of 12,210 miles, and an average of 244 square miles for one mile of coast-line. According to Strelbitski, Europe has only 75 square miles of area to each mile of coast-line, and, according to recent figures, England and Wales have only one-third of this, viz., 25 square miles.

(ii.) *Historical Significance of Coastal Names.* It is interesting to trace the voyages of some of the early navigators by the names bestowed by them on various coastal features—thus Dutch names are found on various points of the Western Australian coast, in Nuyts' Archipelago, in the Northern Territory, and in the Gulf of Carpentaria; Captain Cook can be followed along the coasts of New South Wales and Queensland; Flinders' track is easily recognised from Sydney southwards, as far as Cape Catastrophe, by the numerous Lincolnshire names bestowed by him; and the French navigators of the end of the eighteenth and the beginning of the nineteenth century have left their names all along the Western Australian, South Australian, and Tasmanian coasts.

5. **Geographical Features of Australia.**—As indicated in the preceding issues of this Year Book, it is intended each year to give fairly complete information concerning some special geographical element. Thus No. 1 Year Book, pp. 60-68, contains an enumeration of Coastal features, No. 2, pp. 66-77, deals with Hydrology, and No. 3, pp. 59-72, with Orography. In the present issue the Lakes of Australia constitute the special feature treated. An orographical or vertical relief map of Australia will be found on page 85.

2. Lakes of the Commonwealth.

1. **General.**—The following section contains the latest available official information concerning the lakes of each State. It will, of course, be understood that both the area and depth of the mainland lakes are subject to considerable variation according to the season.

2. **New South Wales.**—(i.) *Introductory.* The accompanying information regarding the lakes of New South Wales has been compiled from particulars supplied by the Lands Department of that State. The name, position, area, etc., of each of the lakes will be found in the tabular statement on pp. 62 *et seq.*

Where the space in columns has not been filled in, the information is not obtainable.

The letters in the column headed "Geological character" refer to classification adopted in (iv.) following. An explanation of the numbers and signs attached to the names of the lakes in the table will be found in the accompanying notes.

(ii.) *Flora of the Lakes of New South Wales.* As a botanical survey of the Lakes of New South Wales has never been undertaken information relating to their characteristic flora is necessarily incomplete.

With regard to the coastal or estuarine lakes containing either salt or brackish water, the low-lying margins are commonly the habitat of a "Swamp Oak," *Casuarina glauca*, the trees often extending for a short distance into the water.

Lake George—In 1898 the water was high in the shallow lake, but rapidly receding, and wherever the water receded a dense green carpet appeared of a creeping Chenopodium, determined by Professor Murr as *Chenopodium glaucum L. var. ambiguum*, a small salt-bush, and considered valuable as a fodder for sheep.

Lake Oxley lies at the foot of Mount Oxley, and is filled only perhaps once in 10 years. In 1883 it was a smooth plain of white clay, with the sharply defined shore of a lake. A special feature of this plain was the "Cane-grass," *Glyceria ramigera*, F.v.M.,

a bamboo-like grass often 10 feet high, which studded the plain. The "Lignum Scrub," *Muehlenbeckia cunninghami*, (F.v.M.), grows in many of these clay-pans, but is absent at Lake Oxley.

The *Tuggerah Lakes*, consisting of three lakes known as the Entrance, Middle, and Upper lakes, are brackish and slightly affected by the ocean tides. They are very shallow and are much overgrown with *Ruppia* or *Zostera*. The principal shore plants are :—

Banksia integrifolia, B. serrata, Eupomatia laurina, Alsophia cooperi, Scolopia brownii, Euroschinus falcatus, Casuarina glauca, Duboisia myoporoides, Cryptocarya glaucescens, Rhodomyrtus psidioides, Endiandra sieberi, Monotoca elliptica, Wilkia macrophylla, Trochocarpa laurina, Phyllanthus ferdinandi, Alphitonia excelsa, Cryptocarya australis, Rhus rhodanthema, Panax elegans, Diploglottis cunninghami, Livistona australis, Festuca littoralis, Spinifex hirsuta, Zoysia pungens, Mesembryanthemum æquilaterale, Convolvulus erubescens, Senecio australis.

Lake Cargelligo is a large area of impounded water, which, after a copious rainfall, possesses considerable depth, and floods over large areas of low land at its entrance. In times of drought it becomes very shallow, and dries up sufficiently to allow sedges and annual grasses to grow, when it becomes a favourite spot for cattle to graze over while other places are destitute of fodder. The following plants are characteristic of the vegetation in and around the lake :—

Vallisneria spiralis grows profusely when the water is present, and attracts numbers of wild ducks and swans: when the water recedes cattle feed upon this vegetation to advantage.

Potamogeton obtusifolius, Damasonium australe, Philydrum lanuginosum, Lemna trisulca. These are the principal water plants.

The plants on the extreme edge of the lake are :—*Heliotropium curassavicum, Atriplex semibaccata, Cyperus vaginatus, C. eragrostic, Lepturus cylindricus.*

On the drier ground such plants as *Eucalyptus bicolor* and *E. rostrata* are the predominant trees; *E. melliodora, E. melanophloia, E. hemiphloia var. albens*, and *E. conica* are fairly plentiful.

Principal wattles—*Acacia pendula, A. salicina, A. decurrens, A. harpophylla*, and *A. juniperina.*

Fodder plants, &c.—*Mesembryanthemum australe, Zygophyllum fruticulosum, Clianthus dampieri, Swainsona galegifolia, Glyceria ramigera, Danthonia penicellata, Themeda forskalli, &c.*

Introduced plants (weeds)—*Lantana camara, Rosa rubiginosa, Ricinus communis, Datura stramonium, D. tatula, Solanum sodomœum.*

Hordeum murinum is the principal grass for fodder purposes.

(iii.) *Fauna of the Lakes of New South Wales.* The Lakes of the State may be grouped zoologically into

(*a*) The Coast Lagoons such as Lake Illawarra,
(*b*) The Lakes of the Western Plains of which Lake Menindie is an example, and
(*c*) The Lakes of the Kosciusko Highlands, of which the Blue Lake is the most famous.

Lake George and *Lake Bathurst* are anomalous lakes which run dry at intervals, and cannot therefore contain a permanent fauna.

The coast lakes which regularly or temporarily communicate with the sea, have the usual estuarine fauna, not to be distinguished from that of the mouths of the Clarence, Hunter, and Hawkesbury Rivers. All are more or less brackish and shallow. Their mud or sandy floors are carpeted with such vegetation as *Poseidonia* and *Zostera*. A large proportion of the fish supply of the State comes from the lakes. Large quantities of mullet (*Mugilidæ*), whiting (*Sillaginidæ*), bream (*Chrysophrys australis*), blackfish

(*Girella tricuspidata*), flathead (*Platycephalidæ*), and flatfish *Pleuronectidæ*), are caught annually and forwarded to the Sydney markets. The Crustacea are represented by the prawn (*Metapenaeus macleayi*), the swimming crab (*Portunus pelagicus*), the mangrove crab (*Scylla servata*), and the mud crabs (*Hellocius cordiformis, Sesarma crythrodactyla*, and *Chasmagnathus lævis*

Characteristic molluscs are the cockle (*Arca trapezia*), the oyster (*Ostrea mordax*), the whelk (*Pyrazus perculeus*), with species of *Tapes, Taparium, Tellina*, and *Salinator*

The fauna of the western lakes and billabongs still awaits a thorough examination. In favorable seasons they are thronged with numerous animals, which in dry weather either die, seek refuge in the mud, or remain in a state of suspended animation. Among the higher forms of life may be noted the fresh water catfishes (*Copidoglanis tandanus*, and *C. obscurus*), golden perch (*Plectroplites ambiguus*), macquarie perch (*Macquaria australasica*), and the murray cod (*Oligorus macquariensis*). The bay-bream (*Dorosoma erebi*) occurs in plenty in the lagoons.

Several kinds of frogs (*Limnodynastes dorsalis, Chiroleptes platycephalus and Notaden bennetti*) chorus in rainy weather. The Crustacea are represented by forms of *Apus, Estheria, Limnadopsis, Astacopsis*, and perhaps *Potamon*. Pond snails and mussels (*Melania, Vivipara, Isadora and Unio*) are common mollusca.

Far more peculiar and of greater scientific interest are the Kosciusko Lakes, viz., the Blue Lake, Lake Albina, Lake Cootapatamba, the Club Lake and Hedley Tarn. These are situated at an elevation of over 6000 feet and are all enclosed by moraine dams left by vanished glaciers. Their fauna is related in the first instance to that of Tasmania, and in a wider sense to that of New Zealand, South America, and Antarctica: as a rule the species are restricted to the Australian Alps. This fauna has not yet been exhaustively investigated, but various expeditions from the Australian Museum have partly explored it. The fish that swims the highest in Australia is *Galaxias findlayi:* a rare and remarkable crustacean is *Phreatoicus australis. Annelids* (worms) discovered in the Blue Lake are *Tubifex davidi, Branchiura pleuretheca*, and *Phreodrilaides notabilis.*

(iv.) *Geological Character and Probable Origin of the Lakes of New South Wales.* From the lists it will be seen that there are a great number of so-called lakes in the Southern and New England Tablelands with regard to which no information is available. Probably many of these occupy basins due to geological disturbance, but as it would be misleading to class them under that heading they are placed under the general heading of "Lakes occupying local depressions in areas of drainage" (*c*). The only lakes with regard to which any definite information as to the geological cause is available, are Guyra Lagoon (Crater Lake), Lake George (a lake occupying a faulted area), and Lake Bathurst.

The classification adopted is admittedly unsatisfactory, but it appears to be the best under the circumstances :—

(A) Coastal Lakes or Lagoons, caused by the formation of bars and banks of river silt and the joint action of tides and prevailing winds.

(B) Shallow Lakes found along the courses of rivers, more especially the Murray and Darling Systems, and formed by the building up of flood barriers and plains.

(C) Lakes of the Western and Central areas formed by the filling of local depressions. In flood there is direct connection between (*b*) and (*c*) of the Paroo River System and Ana-branches.

(D) Lakes of the Kosciusko Highlands, due to the formation of barriers of moraine material.

(E) Special Lakes due to distinct geological causes :—Lake George, Lake Bathurst, and Guyra Lagoon.

LAKES OF NEW SOUTH WALES.

Name of Lake.	Position.	Approx. Area.	Greatest Length.		Greatest Breadth.		Maximum Depth.	Average Depth.	Geological Character.
			Miles.	Chains.	Miles.	Chains.			
		Acres.					ft	ft	
Agnes (1)	Wakool, 6 miles S. of Moulamein (*f*)	*e*	—	48	—	32	6	*a*	C
Albert	Wynyard, 4 miles S. of Wagga (*f*)	240	1	—	—	45	10	6	C
Albina (2)	Selwyn, 1⅜ miles N. of Mount Kosciusko (*f*)	36	—	50	—	10	—	—	D
Altiboulka (3) *b* ...	Yantara, 27 miles N.E. of Yantara Lake (*f*)	1,000	2	—	—	60	10	5	C
Amphitheatre (4) *b*	Livingstone, 22 miles E. of Menindee (*f*) ...	1,920	2	—	1	40	6	*h*	C
Arable (5)	Beresford, 9 miles S.W. of Cooma (*f*) ...	45	—	37	—	16	—	—	B*
Avon (6)	Wellesley, 14 miles S.W of Nimmitabel (*f*)	360	—	93	—	75	—	—	B*
Baleka (7)	Tandora, 18 miles N.E. of Menindee (*f*) ...	640	1	40	1	—	10	*g*	B*
Bally Castle or Taylors (8)	Barrona, 20 miles S.W. of Goombalie (*s*) ...	1,000	2	—	—	60	4	2	C
Bancanya (9) ...	Mootwingee, 30 mls. S.W. of Koonenberry (*f*)	10,240	8	—	3	—	20	*g*	C
Baragoot (10) ...	Dampier, 2¼ miles S. of Bermaguee (*s*) ...	100	—	80	—	30	—	—	A
Barnato (11) ...	Booroondarra, 50 miles W. of Cobar (*f*) ...	320	—	60	—	40	6	3	C
Barney (7) *d* ...	Rankin, 49 miles N.E. of Wilcannia (*f*) ...	Dry	—	—	—	—	—	—	C
Barney (12) *d* ...	Manara, 23½ miles S.W. of Ivanhoe (*f*) ...	Dry	—	—	—	—	—	—	C
Bathurst or Bundong (6)	Argyle, 1 mile E. of Tarago (*b*)...	3,600	3	35	2	35	10	4	E
Beard's or Black (6)	Wellesley, 16 miles S.W. of Nimmitabel (*f*)	500	1	35	—	57	—	—	B*
Big Sand Hill (13) ...	Wakool, 19 miles S.E. of Balranald (*f*) ...	320	1	—	—	64	6	*a*	C
Bijiji (7)	Tandora, 14 miles N.E. of Menindee (*f*) ...	1,600	3	—	1	—	10	*i*	B
Bingery (Goodbo) ...	Windeyer, 44½ miles W. of Pooncaira ...	—	—	—	—	—	—	—	B
Bintullia (14) ...	Menindee, 26¼ miles S.W. of Menindee (*f*) ...	—	—	—	—	—	—	—	B
Birroul (10) ...	Dampier, 5½ miles N. of Moorooma (*s*) ...	500	1	20	1	8	—	—	A
Black (6)	Wellesley, 2 miles S.E. of Bibbenluke (*f*))	140	—	53	—	40	—	—	B*
Blue (15)	Wallace, 4½ miles N.E. of Mt. Kosciusko (*f*...	60	—	30	—	20	—	—	D
Blue	Tara, 51 miles W. of Pooncaira	—	—	—	—	—	—	—	B
Bondi (10)	Auckland, 3 miles S. of Tathra (*s*)	67	—	49	—	23	—	—	C*
Boocathan (16) ...	Cairn, 7 miles N.W. of Oxley (*f*)	960	2	—	1	—	7	*g*	C
Boolaboolka (17) *b* ...	Livingstone, 44½ miles S.E. of Menindee (*f*)	7,680	9	—	2	—	20	*g*	C
Booloombayt (18) ...	Gloucester, adjoins the Broadwater on N. (*s*)	3,500	7	—	1	40	—	—	A
Boolpoora (7) ...	Killara, 54 miles S.W. of Louth (*f*)	Dry	—	—	—	—	—	—	C
Boundary (15) ...	Wallace, 3 miles E. of Dalgety (*f*)	3	—	9	—	4	—	—	C*
Brennan (17) *b* ...	Livingstone, 52½ miles E. of Menindee (*f*) ...	960	2	40	1	40	20	*g*	C
Brickkiln (17) *b* ...	Livingstone, 55 miles N.E. of Menindee (*f*)	320	2	—	—	40	—	*g*	C
Brisbane Water (19)	Northumberl'nd, adjoins Broken Bay on N.(*s*)	7,000	6	40	3	—	20	16	A
Brommeys (17) ...	Livingstone, 55 miles E. of Menindee (*f*) ...	1,920	3	—	2	—	—	*g*	C
Buckley (6)... ...	Wallace, 6½ miles N.E. of Dalgety (*f*)... ...	145	—	54	—	50	—	—	C*
Bulbararing (20) ...	Northumberland, 4½ mls. N.E. of Gosford (*b*)	200	1	20	—	60	—	—	A
Bullanamang (5) ...	Beresford, 3½ miles S.W. of Bredbo (*f*) ...	28	—	22	—	17	—	—	B*
Bullea	Evelyn, 28 miles S. of Milparinka	—	—	—	—	—	—	—	C
Bullenbalong (21) ...	Wallace, 8 miles N.W. of Berridale (*f*) ...	50	—	33	—	20	—	—	B*
Bullogal (22) ...	Waljeers, 27 miles S.W. of Booligal (*f*) ...	640	1	40	1	—	7	*h*	C
Bunda (23)	Young, 44½ miles W. of Wilcannia (*b*) ...	Dry	—	—	—	—	—	—	C
Bungarry (24) [Duckshott]	Waljeers, 14 miles N.E. of Oxley (*f*)	160	—	60	—	40	12	*g*	C
Bunumburt (25) ...	Cairn, 9½ miles W. of Oxley (*f*)	100	—	40	—	30	8	4	C
Burkanoko (26) ...	Barrona, 36 miles W. of Ford's Bridge (*s*) ...	160	2	—	—	10	12	6	C
Burns (27) [3 lakes]	Wellesley, 12 miles S.W. of Nimmitabel (*f*)	40 25 15	— — —	40 38 27	— — —	17 10 7	— — —	—	B*
Burra Burra (5) ...	Georgiana, 5 miles N.W. of Taralga (*f*) ...	290	1	—	—	78	—	—	B*
Burrill	St. Vincent, 2 miles S.W. of Ulladulla (*s*) ...	1,120	2	40	1	60	7	3	A
Cargelligo (28) ...	Dowling, at Cargelligo (*f*)	2,500	3	40	1	56	15	9	B
Carroll's (5) ...	Wallace, 4 miles E. of Berridale (*f*)	20	—	19	—	14	—	—	B*
Cathie (29)... ...	Macquarie, 9 miles S. from Pt. Macquarie (*b*)	635	1	60	1	—	—	—	A
Cawndilla (30) ...	Menindee, 9 miles S.W. of Menindee (*f*) ...	23,040	8	—	6	—	12	*g*	C
Chesney (11) ...	Barrona, 28 miles W. of Goombalie	160	—	40	—	40	4	2	C
Club (15)	Wallace, 3½ mls. N.E. from summit of Mount Kosciusko (*f*)	10	—	12	—	9	—	—	D
Cobaki Broadwater (31)	Rous, 3 miles N.W. from Chinderah (*s*) ...	450	1	40	—	50	3	1½	A
Cobham (32) ...	Yantara and Evelyn, 30 miles S.E. of Milparinka (*f*)...	1,280	2	40	1	40	12	8	C
Cockrone (19) ...	Northumberland, 5 miles E. of Gosford (*b*)	120	1	—	—	20	—	—	A
Cohens (10) ...	Auckland, 1½ miles W. of Tathra (*s*)... ...	96	—	66	—	58	—	—	A
Coila (10)	Dampier, 6¾ miles S. of Moruya (*s*)	1,850	3	5	1	25	—	—	A
Collins	Menindee and Windeyer, 29 miles S.W. of Menindee	—	—	—	—	—	—	—	C
Comayjong (33) ...	Waljeers, 1 mile N. of Oxley (*f*)	200	—	60	—	40	—	—	C
Condoulpe (34) ...	Wakool, 12 miles S.E. of Balranald (*f*) ...	*e*	2	16	1	16	10	*a*	C
Conjola (10) ...	St. Vincent 6 miles N. of Ulladulla (*s*) ...	1,600	3	60	2	60	7	3	A
Coolamatong (6) ...	Wallace, 2¾ miles W. of Berridale (*f*)... ...	84	—	46	—	35	—	—	E
Coomaroop (35) ...	Wakool, ½ mile E. of Tooleybuc (*f*)	800	1	40	1	—	—	*a*	B
Coombah (36) *b* ...	Windeyer, 62 miles N.W. of Pooncaira (*f*) ...	2,560	5	—	1	—	8	*g*	B
Coonbilly (37) ...	Irrara, 17 miles N.W. of Ford's Bridge (*s*) ...	500	2	—	—	30	12	6	C

LAKES OF NEW SOUTH WALES.—(Continued).

Name of Lake.	Position.	Approx. Area.	Greatest Length.		Greatest Breadth.		Maximum Depth.	Average Depth.	Geological Character.
			Miles.	Chains.	Miles.	Chains.			
		Acres.					ft	ft	
Coopers (5)... ...	Wellesley, 7¼ miles W. of Nimmitabel (*f*) ...	70	—	30	—	28	—	—	B*
Coorpooka (38) *d* ...	Killara, 36 miles N.E. of White Cliffs (*f*) ...	Dry	—	—	—	—	—	—	B
Cootralantra (39) ...	Wallace, 7⅓ miles N.E. of Nimmitabel (*f*) ...	350	1	5	—	74	—	—	B*
Coralo (10)	Auckland, ⅔ mile N. of Eden (*s*)	180	1	3	—	48	—	—	A
Corega (40)... ...	Young, 44 miles W. of Wilcannia (*f*)... ...	640	1	40	1	—	8	*g*	C
Corunna (10) ...	Dampier, 3 miles S. of Noorooma (*s*) ...	480	2	5	1	30	—	—	A
Cowal (41)	Gipps, 6½ miles N.E. of Marsden (*f*)	15,000	16	60	5	60	10	4⅘	C*
Cudgen (42) ...	Rous, 8 miles E. from Murwillumbah (*s*) ...	320	1	20	—	50	10	4½	A
Cudmirrah (136) ...	St. Vincent, 11 miles S.W. of Huskisson (*s*)	960	1	50	1	20	5	2	A
Cullamulcha (43) ...	Delalah, 59 miles N.W. of Wanaaring (*b*) ...	1,200	3	—	—	50	6	3	C
Cullewie (7) *c* ...	Killara, 24 miles N.E. of Wilcannia (*f*) ...	Dry	—	—	—	—	—	—	B
Cullivel (44) ...	Urana, 12 miles N.E. of Urana (*f*)	3,240	3	40	2	10	—	—	C
Cuttagee (10) ...	Dampier, 4 miles S. of Bermaguee (*s*) ...	298	1	50	—	60	—	—	A
Dead Horse (45) *b* ...	Livingstone, 36 miles N.E. Menindee (*f*) ...	100	—	40	—	40	6	*g*	C
Deadmans (45) *b* ...	Livingstone, 39 miles N.E. of Menindee (*f*)	—	—	—	—	—	6	*g*	C
Deewhy Lagoon(136)	Cumberland, 4 miles N. of Manly (*s*)... ...	80	—	40	—	28	5	2	A
Denman (46) ...	Irrara, 20 miles N.W. of Ford's Bridge (*f*)...	1,000	2	—	—	60	12	6	C
Dennys (17) *b* ...	Livingstone, 54 miles E. of Menindee (*f*) ...	2,560	3	—	2	—	6	*g*	C
Dick (47) *d*	Young, 25 miles N. of Wilcannia (*b*)	3,200	2	40	2	40	6	6	B
Dry (48)	Barrona, 14 miles N.W. of Goombalie (*f*) ...	600	2	—	—	40	4	2	C
,, (49) *b*	Tara, 47 miles W. of Pooncaira (*f*)	80	—	40	—	30	4	*k*	B
,, (50) *b*	Livingstone, 49 miles E. of Menindee (*f*) ...	1,920	2	40	2	—	7	*k*	C
,, (51) *d*	Mossgiel, 9 miles S. of Ivanhoe (*f*) ...	Dry	—	—	—	—	—	—	C
,, (22)	Waljeers, 24½ miles S.W. of Booligal (*f*) ...	640	1	—	1	—	6	*k*	C
,, (52)	Wakool, 22½ miles N.E. of Moulamein (*f*) ...	*e*	1	40	1	24	6	*a*	C
Dudal Comer (53) ...	Hume, ½ mile S.W. of Henty (*f*)	2,100	3	70	2	50	—	—	C
Dukes (5)	Wellesleys. 13 miles S.W. of Nimmitabel (*f*)	50	—	30	—	25	—	—	B
Dundomallee (54) *c*...	Caira, 13⅔ miles N. of Balranald (*f*)	1,280	2	40	1	40	10	*l*	C
Durras Water (10) ...	St. Vincent, 6⅔ miles N.E. of Bateman (*s*) ...	1,200	3	40	2	—	—	—	A
Eckerboon (23) ...	Tandora, 46 miles W. of Wilcannia (*b*) ...	160	—	40	—	40	*k*	—	C
Emu (7)	Menindee, 5 miles S.W. of Menindee (*f*) ...	3,200	3	0	2	0	8	*g*	B
Eucalyptus (50) *b* ...	Livingstone, 54 miles E. of Menindee (*f*) ...	1,920	3	40	1	40	15	*g*	C
Eucumbene (55) ...	Wallace, 4 miles S. of Adaminaby (*f*) ...	32	—	35	—	15	—	—	B*
Eukobilli	Menindee, 9 miles S.W. of Menindee (*f*) ...	320	1	0	—	40	8	*g*	C*
Fort Grey Basin or Pinaroo (56) ...	Poole, 52 miles N.W. of Tibooburra (*b*) ...	1,000	2	—	—	60	12	6	C
Ganaway (57) *c* ...	Caira, 24 miles S.W. of Oxley (*f*)	—	—	—	—	—	—	—	C
Geer (58)	Wakool, 9 miles E. of Tooleybuc (*f*)... ...	*e*	—	64	—	40	5	*a*	B C
Genoe (59)	Wakool, 10 miles E of Tooleybuc (*f*)... ...	2	1	16	—	72	6	*a*	B C
George or Werriwa	Murray 3½ miles N. of Bungendore (*b*) ...	38,500	15	60	6	6	*g*	—	E F
Gilman	Mitchell, 6½ miles S.W. of Kingston (*f*) ...	206	1	35	—	20	8	4	C
Golgol (60)... ...	Wentworth, 2 miles N. of Gol-Gol (*f*) ...	640	1	40	1	—	10	*g*	C
Goonimur (61) ...	Wakool, 9⅔ miles S.E. of Tooleybuc (*f*) ...	*e*	—	56	—	24	5	*a*	B C
Goran (62)	Pottinger, 20 miles S. of Gunnedah (*f*) ...	10,000	5	—	3	—	3	1½	C
Green (63)	Wellesley, 2 miles S.E. of Bibbenluke (*f*) ...	30	—	27	—	16	—	—	B
,, (64)	Evelyn, 26 miles S.E. of Milparinka (*f*) ...	—	—	—	—	—	—	—	C
Guises	Wallace, 10 miles W. of Dalgety (*f*)	3	—	8	—	4	—	—	B
Gum Lake (50) ...	Livingstone, 51 miles S.E. of Menindee (*f*)	1,600	2	40	1	40	8	*g*	C
Gunbar (65) ...	Nicholson, 13 miles N.W. of Gunbar (*b*) ...	*e*	—	56	—	40	6	½	C
Gunnagia	Mossgiel, 24 miles N.W. of Hillston (*f*) ...	320	1	—	—	40	4	3	C
Gunyulka (66) *d* ...	Werunda, 12 miles S.E. of Wilcannia (*f*) ...	Dry	—	—	—	—	—	—	C
Harvey's (67) ...	Wakool, 16½ miles S.E. of Balranald (*f*) ...	*e*	—	40	—	40	6	*a*	C
Haystack (50) *b* ...	Livingstone, 55⅔ miles N.E. of Menindee (*f*)	60	1	20	1	—	8	*g*	C
Hedley Tarn (68) ...	Wallace, 4⅓ miles N.E. of summit of Mount Kosciusko (*f*)	10	—	17	—	8	—	—	D
Hiawatha	Clarence, 20 miles S.E. of Grafton (*f*) ...	860	2	25	—	70	—	15	A
Hogans (69) ...	Livingstone, 45 miles N.E. of Menindee (*f*)	160	1	—	—	40	—	—	C
Hugundara (5) ...	Wallace, 19 miles W. of Cooma (*f*)	15	—	18	—	11	—	—	B
Illawarra (136) ...	Camden, 4 miles S. of Wollongong (*s*) ...	8,500	4	70	3	30	13	5	A
Innes or Burrawan (70)	Macquarie, 2½ miles S. of Pt. Macquarie (*f*)	6,150	4	60	3	—	—	—	A
Island (55)	Wallace, 12 miles W. of Cooma (*f*)	12	—	13	—	10	—	—	B
Island (55)	Wallace, 20 miles S.W. of Nimmitabel (*f*)...	45	—	28	—	25	—	—	B
Jillimatong (6) ...	Wallace, 13⅔ miles W. of Dalgety (*f*) ...	70	—	41	—	30	—	—	B
Kangaroo (71) ...	Menindee, 20 miles S.W. of Menindee (*f*) ...	1,280	1	40	2	—	—	—	C
Kerkeri (72) ...	Wakool, 15 miles N.W. of Moulameiu (*f*) ...	200	—	56	—	32	8	—	C
Kiah (55)	Wallace, 3 miles N.W. of Berridale (*f*) ...	50	—	31	—	20	—	—	B
Killen (73)	Delalah, 50 miles N.W. of Wanaaring (*b*) ...	300	—	60	—	50	6	3	C
Killmacoola (39) ...	Beresford, 11 miles W. of Cooma (*f*)... ...	100	—	54	—	25	—	—	B
Kopago (74) ...	Young, 22½ miles N. of Wilcannia (*f*)... ...	640	1	40	1	—	10	6	B
Lake, unnamed (75)	Barrona. 38 miles W. of Goombalie (*s*) ...	—	—	—	—	—	—	—	C
,, (salt) ,,	Barrona, 37 miles S.W. of Goombalie (*s*) ...	—	—	—	—	—	—	—	C
,, ,, ,,	Barrona, 44 miles S.W. of Goombalie (*s*) ...	—	—	—	—	—	—	—	C
,, ,, ,,	Landsborough, 48 mls.S.W. of Goombalie (*s*)	—	—	—	—	—	—	—	C
Loriwa (76)... ...	Wakool, 19½ miles S.E. of Balranald (*f*) ...	*e*	—	64	—	48	5	*a*	C

LAKES OF NEW SOUTH WALES.—(Continued).

Name of Lake.	Position.	Approx. Area.	Greatest Length.		Greatest Breadth.		Maximum Depth.	Average Depth.	Geological Character.
			Miles.	Chains.	Miles.	Chains.			
		Acres.					ft	ft	
Lignam (22) ...	Caira, 5 miles S.W. of Oxley (*f*)	120	—	60	—	20	3	1	C
Llangothlin ...	Clarke, 7 mls. E. of Ben Lomond Rly. Stn. (*f*)	980	2	—	1	50	6	3	B*
Little (49) *b* ...	Windeyer, 40 miles N.W. of Pooncaira (*f*) ...	640	1	20	1	—	3	*k*	B
Little Sand Hill (77)	Wakool, 20 miles S.E. of Balranald (*f*) ...	*e*	—	40	—	32	4	*a*	B*
Little Amphitheatre (4) *b*	Livingstone, 20 miles E. of Menindee (*f*) ...	160	—	40	—	40	—	—	C
Little Llangothlin (78)	Clarke, 8 mls. E. of Ben Lomond Rly. Stn. (*f*)	285	—	65	—	65	4	2	B*
Little Mother of Ducks	Sandon, 4 miles S. of Guyra (*f*)	80	—	50	—	27	6	2	B*
Long (50) *b*... ...	Livingstone, 5½ miles N.E. of Menindee (*f*)	1,120	2	40	—	60	—	—	C
,, (49) *b*... ...	Windeyer, 35 miles S.W. of Menindee (*f*) ...	320	1	20	—	40	—	—	B
Loorica (79) ...	Caira, 17 miles E. of Balranald (*f*)	*e*	1	40	—	64	6	*a*	C
Lyle (80)	Wakool, 9 miles N.W. of Moulamein (*f*) ...	150	—	48	—	32	6	*a*	C
Macommon (81) ...	Caira, 16 miles N. of Balranald (*f*)	—	—	—	—	—	—	—	C
Macquarie (19) ...	Northumberland, 8½ miles S.W. from Newcastle (*s*)	29,000	15	—	5	—	40	25	A
Maffra (82)	Wellesley, 8¾ miles S.E. of Dalgety (*f*) ...	70	—	63	—	30	—	—	B
Malta (7)	Tandora, 25 miles N.E. of Menindee (*f*) ...	640	1	40	1	20	8	*k*	B
Manies (83)... ...	Dowling, ½ mile S. of Cargelligo (*f*)	1,000	2	40	1	—	8	5	B
Marias (84)... ...	Dowling, 3 miles S. of Cargelligo (*f*)	600	2	—	1	—	8	5	B
May or Cootapatamba (2)	Selwyn, ¾ mile S.E. of Mount Kosciusko (*f*)	15	—	23	—	9	—	—	D
Menindee (7) ...	Menindee & Tandora, 2 miles W. of Menindee (*f*)	38,400	9	—	8	—	20	*k*	B
Mere (8)	Barrona, 26 miles S.W. of Goombalie (*f*) ...	200	—	50	—	40	6	3	C
Merrimbula (10) ...	Auckland, 1 mile N. of Panbula (*s*)	1,350	2	57	1	60	—	—	A
Merrimageel (85) ...	Waljeers, 14½ miles W. of Booligal (*s*) ...	320	1	—	—	40	4	2	B
Merwin (86)	Wakool, 17 miles S.E. of Balranald (*f*) ...	*e*	—	64	—	64	6	*a*	C
Mickwilly (87) *d* ...	Rankin, 66 miles N.E. of Wilcannia (*f*) ...	Dry	—	—	—	—	—	—	C
Milkengay (49) *b* ...	Wentworth, 42 miles S W. of Pooncaira (*f*)	6,400	4	40	3	—	15	—	B
Mindona (49) *b* ...	Windeyer, 31 miles N.W. of Pooncaira (*f*) ...	15,360	7	—	4	—	7	—	B
Minnie Water	Clarence, 19½ miles S.E. of Grafton (*f*) ...	128	—	48	—	40	—	15	A
Miroo (136)... ...	St. Vincent, 2 miles S.E. of Termeil (*s*) ...	400	1	30	—	70	6	2	A
Moon Moon (88) ...	Nicholson, 14½ miles N.E. of Booligal (*f*) ...	*e*	1	—	—	56	—	—	B C
Mooratchie (89) ...	Yungnulgra, 36 miles N.E. of Wilcannia (*f*)	320	1	—	—	40	8	6	B
Moornanyah (90) *c* ...	Manara, 20 miles S.W. of Ivanhoe (*f*) ...	Dry	—	—	—	—	—	—	C
Moseys (50) *b* ...	Livingstone, 5½ miles E. of Menindee (*f*) ...	640	1	20	1	20	8	—	C
Mother of Ducks (91)	Hardinge, at Guyra (*f*)	1140	2	—	1	30	8	2	E C
Muckee (92) *c*	Caira, 14 miles N.W. of Balranald	—	—	—	—	—	—	—	C
Muddah (6) ...	Beresford, 10 miles N.W. of Cooma (*f*) ...	50	—	38	—	21	—	—	B*
Muetta (93)... ...	Beresford, 12 miles S. of Cooma (*f*)	20	—	30	—	15	—	—	B*
Mullawooka Basin (94)	Fitzgerald, 58 miles S.W. of Wanaaring (*f*)	1600	3	40	1	—	10	5	B
Mummuga (95) ...	Dampier, 3½ miles N. of Noorooma (*s*) ...	460	1	35	1	6	—	—	A
Mungundi (74) ...	Fitzgerald, 30 miles S. of Wanaaring (*f*) ...	100	—	40	—	27	10	8	B
Munmorah (20) ...	Northumberland, adj'ng Tuggerah Lakes (*s*)	2000	3	—	2	—	—	—	A
Myall (18)	Gloucester, 18 mls. N.E. from Pt. Stephens (*s*)	15300	9	20	5	40	—	—	A
Nangudga (10) ...	Dampier, 1½ miles S. of Noorooma (*s*) ...	200	—	65	—	25	—	—	A
Nargal or Nuttal (10)	Dampier, 3½ miles S. of Noorooma (*f*) ...	45	—	45	—	32	—	—	A
Naroolpilly (7) *d* ...	Rankin, 62 miles N.E. of Wilcannia (*f*) ...	Dry	—	—	—	—	—	—	C
Narrabeen (136) ...	Cumberland, 6½ N. of Manly (*s*)	600	1	40	1	20	7	3	A
Narran or Terewah	Finch & Narran, 52 mls. N.E. of Brewarina (*f*)	35,000	19	—	6	—	15	7	C
Nearia (49) *b* ...	Windeyer, 39 miles W. of Pooncaira (*f*) ...	7,560	4	—	3	—	4	*k*	B
Noeyanga (60) ...	Taila, 9½ miles E. of Euston (*f*)	1,560	2	40	—	40	10	3	B
Nettlegoe (7) ...	Menindee, 25 miles S.W. of Menindee (*f*) ...	7,040	4	40	3	—	8	*k*	B
New (97)	Menindee, 20 miles S.W. of Menindee (*f*) ...	160	—	60	—	40	10	4	B
Nialia (49) *b* ...	Tara, 48¾ miles W. of Pooncaira (*f*)	7,680	5	40	3	—	4	*k*	B
Nichebulka (98) ...	Barrona, 38 miles W. of Ford's Bridge (*s*) ...	300	1	—	—	40	6	3	C
Nine Mile (47) *d* ...	Yungnulgra & Young, 31 miles N.E. of Wilcannia (*f*)	Dry	—	—	—	—	—	—	B
Nitchie (49) *b* ...	Windeyer & Wentworth, 43 miles W. of Pooncaira (*f*)	1,280	2	—	1	20	4	*k*	B
North (50) *b* ...	Livingstone, 38 miles E. of Menindee (*f*) ...	3,200	3	—	2	60	6	*k*	C
Nucha (Nutchie) (99)	Mootwingee, 37 miles N.E. of Toorawangee (*f*)	1,280	2	—	1	20	6	*k*	C
Oil Tree Lagoon (100)	Hume, 14 miles N.W. of Howlong (*f*)... ...	1,460	1	70	1	50	—	—	—
Oleopoloko (74) *d* ...	Fitzgerald & Killara, 34 miles N.E. of White Cliffs (*f*)	Dry	—	—	—	—	—	—	B
Oxley	Cowper, 20 miles S.E. of Bourke	—	—	—	—	—	—	—	—
Oulilla (7) *d* ...	Killara, 24 miles N.E. of Wilcannia (*f*) ...	Dry	—	—	—	—	—	—	B
Paika (57) *c* ...	Caira, 15 miles N. of Balranald	—	—	—	—	—	—	—	C
Pamamaroo (7) ...	Tandora, 5 miles N.E. of Menindee (*f*) ...	16,640	6	—	5	—	10	—	B
Panbula (10) ...	Auckland, 5½ miles N. of Eden (*s*)	700	1	40	1	—	—	—	A
Paradise (49) *b* ...	Windeyer, 30 miles S.W. of Menindee (*f*) ...	480	1	—	—	60	6	—	B
Patagorah (14) ...	Windeyer, 51 miles N.W. of Pooncaira ...	—	—	—	—	—	—	—	B

LAKES OF NEW SOUTH WALES.—(Continued).

Name of Lake.	Position.	Approx. Area.	Greatest Length.		Greatest Breadth.		Maximum Depth.	Average Depth.	Geological Character.
			Miles.	Chains.	Miles.	Chains.			
		Acres.					ft	ft	
Patterson (101) ...	Evelyn, 30 miles S.E. of Milparinka (*f*) ...	1,920	2	20	1	40	6	1	C
Peri (Peery) (74) *d* ...	Killara, 28 miles E. of White Cliffs (*f*) ...	Dry	—	—	—	—	—	—	B
Pine	Tara, 50½ miles W. of Pooncaira	—	—	—	—	—	—	—	B
Pinpira	Evelyn, 34 miles W. of Koonenberry (*f*) ...	160	—	40	—	40	1	*k*	C
Pitarpunga (102) *c* ...	Caira, 15 miles N. of Balranald (*f*)	—	—	—	—	—	—	—	C
Pollioillaluka (103) *d*	Werunda, 13 miles S.E. of Wilcannia (*f*) ...	Dry	—	—	—	—	—	—	C
Poomah (104) ...	Wakool, 9½ miles S.E. of Tooleybuc (*f*) ...	450	1	—	—	72	16	*a*	B C
Poon Boon (105) ...	Wakool, 10½ miles S.E. of Tooleybuc (*f*) ...	1,000	1	48	1	16	7	*a*	B C
Poopelloe (7) *d* ...	Werunda, 33 miles W. of Wilcannia (*f*) ...	Dry	—	—	—	—	—	—	C
Popilta (49) *b* ...	Windeyer and Tara, 49½ miles N.W. of Pooncaira (*f*)	22,400	10	—	5	—	10	*k*	B
Popio (49) *b* ...	Windeyer, 42 miles N.W. of Pooncaira (*f*)...	15,360	8	—	4	—	10	„	B
Pysant (50) *b* ...	Livingstone, 42 miles N.E. of Menindee (*f*)	320	1	—	—	60	2	„	C
Queens (106) ...	Macquarie, 1 mile N. of Camden Haven (*s*)	2,560	3	10	2	—	—	—	A
Racecourse (107) ...	Sandon, 2 miles S. of Uralla (*f*)	46	—	25	—	21	15	3	B*
Ratcatchers (50) *b* ...	Livingstone, 44½ miles E. of Menindee (*f*) ...	6,400	6	—	3	—	15	*k*	C
Redbank (49) *b* ...	Windeyer, 36 miles S.W. of Menindee (*f*) ...	320	1	—	—	40	4	*k*	B
Rodmans	Yungnulgra, 30 miles N. of Wilcannia ...	—	—	—	—	—	—	—	B
Roping Pole (100) ...	Mitchell, 3 miles W. of Uranquintry (*f*) ...	480	1	40	—	55	—	—	C
Round Swamp (108)	White, 16 miles W. of Narrabri (*f*)	90	—	32	—	32	10	3½	C
Ryans (22)	Waljeers, 19 miles N.E. of Oxley (*f*)	160	—	40	—	40	4	*k*	C
Salisbury	Sandon, 2½ miles S. of Uralla (*f*)	130	—	55	—	30	8	8	B*
Salt (19)	Wallace, 6½ miles E. of Berridale (*f*)... ...	35	—	26	—	22	—	—	B
Sayers (50) *b* ...	Livingstone, 53 miles S.E. of Menindee (*f*)	2,560	4	40	1	—	15	*k*	C
Shadbolts (14) ...	Windeyer, 37 miles S.W. of Menindee (*f*) ...	40	—	20	—	20	—	—	B
Silistria (14) ...	Tandora, 39 miles E. of Willyama (Broken Hill)	—	—	—	—	—	—	—	
Smith (20)	Gloucester, 26½ mls.N.E.from Pt.Stephens(*s*)	2,500	3	40	1	60	—	—	
Speculation (7) ...	Menindee and Tandora, 10½ miles W.of Menindee (*f*)	640	2	—	1	—	20	*k*	C
Spring Creek (110) ...	Wallace, 4½ miles N.E. of Berridale (*f*) ...	12	—	15	—	9	—	—	B
St. George's Basin (136)	St. Vincent, 4 miles S. of Huskisson (*s*) ...	9,200	6	40	3	50	40	23	A
Tacubah	Rankin, 52 miles N.E. of Wilcannia ...	—	—	—	—	—	—	—	C
Taila (60)	Taila, 8 miles N.E. of Euston (*f*)	—	—	—	—	—	20	5	B
Tala (111)	Caira, 9 miles N.E. of Balranald (*f*)	1,400	2	—	1	40	8	*a*	C
Talbetts (112) ...	Wakool, 18 miles S. of Balranald	—	1	8	—	72	—	—	C
Talpile (113) ...	Wakool, 9 miles S.E. of Tooleybuc (*f*) ...	180	—	56	—	40	8	*a*	C B
Tandon (7)... ...	Menindee, 22 miles S.W. of Menindee (*f*) ...	38,400	12	—	7	—	6	*k*	C
Tandure (7)	Tandora, 10 miles N.E. of Menindee (*f*) ...	5,120	4	—	2	—	10	—	B
Tarragal (114)	Northumberland, 5 miles E. of Gosford (*f*)	80	—	60	—	20	—	—	A
Tarrawong (115) ...	Waljeers, 38 miles W. of Booligal (*f*) ...	320	1	—	—	60	5	*k*	C
Teare (116)... ...	Wakool, 11 miles N.W. of Moulamein (*f*) ...	*e*	—	32	—	32	—	*a*	B
Termeil (136) ...	St. Vincent, 2½ miles E. of Termeil (*s*) ...	120	—	65	—	30	6	2	A
Terranora Broadwater (31... ...	Rous, 2½ miles W. of Chinderah (*s*)	1,100	1	60	1	60	6	1½	A
Teryaweynya (50) *b*	Livingstone, 54½ miles E. of Menindee (*f*) ...	5,120	4	40	2	40	15	*k*	C
The Back (10) ...	Auckland at Merrimbula (*s*)	100	—	60	—	35	—	—	A
The Boundary (15)	Wellesley, 9 miles W. of Nimmitabel (*f*) ...	60	—	30	—	19	—	—	B*
The Broadwater (18)	Gloucester, 11 miles N.E. of Pt. Stephens (*s*)	5,500	5	—	2	40	—	—	A
The Broadwater (117)	Clarence, joins Clarence River between Ashby and Lawrence (*s*)	4,700	3	70	2	67	—	6	A
The Little (10) ...	Dampier, 8½ miles S. of Nooroooma (*s*) ...	30	—	30	—	20	—	—	A
The Dry (22) ...	Waljeers, 6 miles N.E. of Oxley (*f*)	320	1	—	—	60	5	*k*	B
The Long (110) ...	Wallace, 11 miles E. of Adaminaby (*f*) ...	45	—	40	—	17	—	—	B*
The Salt Lake (118)	Yantara, 30 miles S.E. of Milparinka (*s*) ...	16,000	6	—	5	—	—	—	C
The Tinkers (110) ...	Beresford, 8½ miles S.W. of Cooma (*f*) ...	7	—	12	—	9	—	—	B*
Thubergal (119) ...	Beresford, 6½ miles S.E. of Cooma (*f*) ...	30	—	25	—	15	—	—	B*
Tilba Tilba (10) ...	Dampier, 6½ miles S. of Nooroooma (*s*) ...	300	1	45	—	48	—	—	A
Tilpilly (66) *d* ...	Rankin, 56 miles N.E. of Wilcannia (*f*) ...	Dry	—	—	—	—	—	—	C
Tommys (110) ...	Wallace, 5 miles W. of Lake Jellimatong (*f*)	9	—	14	—	8	—	—	D*
Toms	Waljeers, 18 miles N.W. of Booligal (*f*) ...	40	—	20	—	20	4	2	B
Tom Thumb Lagoon (136)	Camden, ½ mile S. of Wollongong (*s*) ...	450	1	20	—	60	5	2	A
Toubouree (136) ...	St. Vincent, 5 miles S.W. of Ulladulla (*s*) ...	350	2	30	—	60	4	1½	A
Tongo (74) *d* ...	Fitzgerald, 56 miles S.W. of Wanaaring (*f*)	Dry	—	—	—	—	—	—	B
Tooim (120) ...	Wakool, 6 miles S.E. of Puah (*f*)	850	2	—	—	72	16	—	C
Travellers (121) ...	Windeyer, 36 miles S.W. of Menindee (*f*) ...	480	1	—	—	60	—	—	B
Tuggerah (114) ...	Northumberland, 8½ miles N. of Gosford (*s*)	18,500	10	40	4	—	—	—	A
Tuross (10)... ...	Dampier, 9 miles S. of Moruya Heads (*s*) ...	1,400	1	70	1	35	—	—	A
Twin (49) *b*... ...	Tara, 56½ miles N.W. of Pooncaira (*f*) ...	40	—	20	—	20	6	*k*	C
Tyson (14)	Kilfera, 28 miles N.W. of Oxley	—	—	—	—	—	—	—	C
Ulenia (122) ...	Yantara, 28 miles S.E. of Milparinka (*f*) ...	2,000 *l*	3	—	1	40	12	6	C
Unnamed (119) ...	Wellesley, 3 mls. S.W. of Beards or Black (*f*)	65	—	42	—	22	—	—	B*
Upper Sand Hill (13)	Wakool, 19 miles S.E. of Balranald (*f*) ...	270	1	—	—	32	6	*a*	—

LAKES OF NEW SOUTH WALES.—(Continued).

Name of Lake.	Position.*	Approx. Area.	Greatest Length.		Greatest Breadth.		Maximum Depth.	Average Depth.	Geological Character.
			Miles.	Chains.	Miles.	Chains.			
		Acres.					ft	ft	
Urana (123) ...	Urana, 2 miles W. of Urana (*f*)	14,500	8	25	4	35	—	—	C
Urangong (124) ...	Urana, 7 miles S.E. of Urana (*f*)	1,160	1	55	1	30	—	—	C
Victoria (50) *b* ...	Livingstone, 56½ miles E. of Menindee (*f*)...	3,840	4	—	2	—	15	*k*	B
Victoria (60) ...	Tara, 34 miles W. of Wentworth (*f*)... ...	25,600	9	—	6	—	30	5	B
Wagonga or Bullengella (10)... ...	Dampier, 1½ miles S.E. of Noorooma (*f*) ...	30	—	37	—	15	—	—	A
Waldaira (125) ...	Caira, 12⅔ miles W. of Balranald (*f*) ...	640	1	20	1	20	15	5	C
Waljeers (22) ...	Waljeers, 17½ miles S.W. of Booligal (*f*) ...	1,280	2	—	1	20	6	4	B
Wallace (14) ...	Livingstone, 28 miles E. of Menindee (*f*) ...	—	—	—	—	—	—	—	C
Wallaga (10) ...	Dampier, 2 miles N. of Bermaguee (*s*) ...	1,800	2	40	2	10	—	—	A
Wallagoot (10) ...	Auckland, 4½ miles S. of Tathra (*s*)	950	2	10	1	10	—	—	A
Wallis (19)	Gloucester, on coast near Cape Hawke (*s*)	19,000	11	—	5	40	—	—	A
Wamberal (114) ...	Northumberland, 5½ miles E. of Gosford (*b*)	140	1	—	—	20	—	—	A
Wapengo (10) ...	Dampier, 8 miles N of Tathra (*s*)	870	2	50	—	77	—	—	B*
Wannah (126) ...	Wakool, 5 miles N. of Tooleybuc (*f*) ...	*c*	—	40	—	16	5	*a*	—
Warracoocarie (7) *d*	Rankin, 49 miles N.E. of Wilcannia (*f*) ...	Dry	—	—	—	—	—	—	C
Warrawenia (49) *b* ...	Tara, 49 miles W. of Pooncaira (*f*)	...	—	—	—	—	—	—	B
Washpool (119) ...	Wellesley, 17 miles S.W. of Nimmitabel (*f*)	15	—	22	—	9	—	—	E*
Watchie (127) ...	Fitzgerald, 34 miles S.W. of Wanaaring (*f*)	320	1	40	—	40	12	10	B
Waterloo (50) *b* ...	Livingstone, 54 miles E. of Menindee (*f*) ...	2,880	3	40	1	60	15	*k*	C
Watson Taylor (20) ...	Macquarie, 2 mls. S. from Camden Haven (*s*)	3,000	3	40	2	—	—	—	A
White Water (50) *b*	Livingstone, 51 miles E. of Menindee (*f*) ...	160	1	—	—	40	10	,,	C
Willeroo (128) ...	Barrona, 8 miles S.W. of Goombalie (*f*) ...	300	1	—	—	40	8	4	C
Windamingle (49) *b*	Tara, 43⅔ miles W. of Pooncaira (*f*)	1,920	3	0	1	40	6	*k*	B
Windaunka (129) ...	Mootwingee, 28 miles W. of Koonenberry (*f*)	640	1	—	1	...	6	1½	C
Wollare (130) ...	Wakool, 9⅔ miles S.E. of Tooleybuc (*f*) ...	380	1	—	—	64	10	*a*	B C
Wooromur (131) ...	Wakool, 12 miles E. of Tooleybuc (*f*) ...	750	1	32	1	—	5	*a*	B C
Wollumboola (136)...	St. Vincent, 1½ miles N. of Jervis Bay (*s*) ...	1,500	2	20	1	55	4	1½	A
Wongallarra (7) *d* ...	Werunda, 57 miles W. of Wilcannia (*f*) ...	11,520 *l*	7	—	4	—	—	—	C
Wooloweyah (117) ...	Clarence, 2 miles S. of Yamba (*s*)	6,400	5	55	2	70	—	5	A
Woytchugga (132) *d*	Young, 6 miles W. of Wilcannia (*f*)	1,280 *l*	2	—	1	40	—	—	B
Yandaroo (133) ...	Barrona, 8 miles S.W. of Goombalie (*f*) ...	240	1	—	—	30	6	3	C
Yanga (134) ...	Caira, 4 miles S.E. of Balranald (*f*)	3,000	3	16	2	—	18	*a*	B C
Yantara (122) ...	Yantara, 25 miles S.E. of Milparinka (*f*) ...	6,000	4	—	3	—	15	8	C
Yantla (132) ...	Windeyer, 26 miles N.W. of Pooncaira (*f*)...	2,880	3	—	2	—	10	*k*	B
Yarrie (108) ...	White, 11 miles S.E. of Wee Waa (*f*) ...	180	—	42	—	41	10	3½	C
Yeltow (49) *b* ...	Windeyer, 41⅓ miles W. of Pooncaira (*f*) ...	6,400	5	—	2	40	6	*k*	B
Yentabangee (74) *d*	Fitzgerald, 42 miles N.E. of White Cliffs (*f*)	Dry	—	—	—	—	—	—	B
York (136)	Wallace, 2 miles S. of Adaminaby (*f*) ...	36	—	23	—	21	—	—	B*

* Origin doubtful.

NOTES.

a After the first 10 chains from the shore all these lakes are practically flat bottomed, so that the average depth is very little less than the greatest depth.

b Lakes of the Ana Branch and Teryawynia Creek Systems. The lower lakes of the first-mentioned system, those situated on Avoca, Bunneringa and Lake Victoria Holdings, are controlled by a private trust constituted of the lessees of these holdings. Under this trust no water (the supply is overflow by way of connecting channels in times of flood from the Ana Branch) is allowed to enter these lakes until the water of the Ana Branch meets that of the Darling at or near their lower confluence, a very rare occurrence.

Similarly with the Teryawynia Creek System. A private trust, constituted of the lessees of Teryawynia, Albemarle, and Tolarno Holdings, controls the intake to these lakes. A large dam and regulator have been constructed on the Teryawynia Creek at its offtake from the Talyawalka Creek. The regulator is kept shut until the Talyawalka water meets that of the Darling at or near their lower confluence. It is questionable if it will ever be opened again. The lakes with water therein constantly receding are looked upon as death traps for stock, and again from a grazing point of view these lakes are considered more valuable in a dry state than if holding water. This system only fills at intervals of 20 years and the lessees have expressed the determination to keep the lakes permanently dry.

c Referring to the lakes on the Lower Murrumbidgee, a large number, notably Paika, Pinaru, Dundomalee, Pitarpunga, and Muckee, with, in the near future, Ganaway and Tori, are and will be kept dry by means of dams across their influent channels, the dry bed of these lakes being looked upon as more valuable for grazing purposes than as storage for water. Within the area of Paika Lake there is a very prolific irrigated area.

d None of the lakes marked thus is filled annually, and many of them are supplied only at long intervals after flood waters have receded. Probably not one retains over 8 feet of water and in numerous instances the depth is very much less.

e No water in ordinary seasons.

g Generally dry.

h Only retains water for short periods.

i Only has water after high flood.

k No average.

l Dry.

(1) Generally dry, fills from the Niemur River.

(2) Very deep, fed by snow springs; presumably old volcanic craters.

(3) Large clay pan filled from surrounding hills by drain from the Bulloo overflow when in flood. Water yellow, fresh when full, brackish when low, good for stock. Often dry.

(4) Probably fills from Talywalka Creek in very high floods.

(5) Alienated, often dry for years.

(6) Reserved, often dry for years.

(7) Only fills after heavy Darling floods.

(8) Large shallow clay pan filled from surrounding country, yellow, good stock water when full.

(9) Fills with drainage from surrounding hilly country.

(10) Coastal.

(11) Clay pan filled from surrounding hills; shallow, yellow water, fresh when full, good for stock. Not permanent.

(12) Filled only in wet seasons or high Willandra floods. Merely regarded as a plain.

(13) Generally contains water, local catchment, alienated to Pultaney Main (Part of Portion 18).

(14) Only looked upon as a plain.

(15) Reserved.

(16) Fills from Lachlan and Murrumbidgee in very high floods.

(17) Fills via Talywalka and Teryaweynia in times of high flood in Darling River.

(18) One of a chain of lakes, Myall, Boolambayt, and Broadwater, connected with Port Stephens by Myall River. Remarkable for its scenery, and abounding in fish.

(19) Popular health and pleasure resort, noted for its beauty and diversity of scenery, and abounding in fish. The entrance is deep enough to allow vessels of considerable tonnage to enter and ply upon its waters.

(20) Noted for its scenery and abounding with fish.

(21) Partly alienated, often dry for years.

(22) Fills from flood waters of Lachlan River.

(23) Not permanent; shallow, filled only in wet seasons.

(24) Fills through Ballogath by artificial channel in times of high flood.

(25) This lake is filled annually owing to an artificial channel and low banks.

(26) Fills from surrounding country, generally contains clear water which is brackish and fit for stock when full.

(27) Three shallow lagoons; alienated.

(28) Originally filled by overflow from the Lachlan River, later by the construction of a weir on the river and the improvement of the channel therefrom to the lake, and by the construction also of embankments, floodgates, etc., Lake Cargelligo is not a permanent sheet of water, and is filled in flood times and stored until the summer months when the Lachlan River ceases running. Water is then allowed to run out of the lake till there is an average depth of about 5 feet, when the floodgates are closed. Two-thirds of this surplus water is allowed to run down the Lachlan and one-third down Willandra Creek. The latter proceeding is effected by a weir (the Willanthry), about 40 miles from Cargelligo, on the Lachlan River. Fish and game abound in and on the lake, and it is an ideal sheet of water for skiff racing and shallow centre-board sailing. The Works Department propose to raise the embankments, etc., 3 feet, and so double the present capacity of the lake.

(29) The water of this lake is generally brackish. Its outlet to the Pacific becomes periodically choked up by a sandbank. During this time it is quite safe and practicable to ride or drive along the barrier of sand which effectually excludes all tides from the lake. Whilst this position lasts the water loses its salinity, but never becomes quite fresh. Should local rainfall be heavy, causing an unusual flow from back lands into the lake, the waters become sufficiently fresh to affect the life and quality of the oysters cultivated on the foreshores. A very heavy downfall locally is generally followed by an outburst through the sandy bar. More often than not the outburst is hastened by local residents using shovels to give the impounded water a start. After such outbursts the lake again becomes tidal and salt for a period, but gradually the silting up process sets in again. The lake is not navigable.

(30) Fills by natural channels and overflow from Menindie Lake in times of high flood.

(31) Terranora and Cobaki Broadwater form the western estuary of the Tweed River and cover an area affected by tides of about 3½ square miles and a watershed of 48 square miles. Terranora Broadwater has a maximum depth of 5 or 6 feet in places, but parts are dry at low water. The average depth at low water average spring tides would not exceed 12 or 18 inches.

Practically the whole of Cobaki Broadwater is dry at low tide except in the channel, where the greatest depth is about 3 feet and the average about 18 inches.

Recently the Public Works Department has had channels cut through Terranora Broadwater to a depth of 6 feet at low tide and 50 feet wide. A dredge is now at work cutting a channel 40 feet wide and 6 feet deep up Cobaki Broadwater, and this will probably be completed in about 18 months' time. The completed channels are navigable for droghers of about 50 or 60 tons, and allow of sugar cane being carried in punts to the mill.

(32) Filled in abnormal seasons by local creeks, will last two or three years. Sandstorms have choked the main channel, and its chief supply is now diverted.

(33) Sandstorms have so filled its feeding channel that its main source of supply is cut off.

(34) Generally dry; local catchment connected by natural channels with Lake Yanga, but a rise of about 7 feet near the centre of channel and corresponding fall further on prevents it from filling. Within W.R.2979 and Yanga, 18th Section Lease.

(35) Within W.R.2013, 44,075, and 44,076.

(36) Fills from overflow from Ana Branch in times of high floods. Questionable if water will ever again reach it.

(37) Local catchment, generally contains water, fit for stock when full and brackish.

(38) Fills by Paroo flood waters, will last 12 months.

(39) Partly alienated, partly reserved. Sometimes dry.

(40) Dry. Filled only in wet seasons from run off of surrounding high country. Not permanent, shallow.

(41) The area of the lake when full is about 40,000 acres, but the area under water is continually changing according to the season and annual rainfall. The average area submerged would probably not exceed 15,000 acres per annum, and taking the last 15 years only the area would be considerably less.

The lake was at one time timbered with gum trees in places, interspersed with "Coba" or "Cooba." These trees have been dead many years, and apparently were killed by the water, an indication that for many years previously the lake bed could not have remained under water for periods of any great length. There are similar green trees along the edge of the lake at the present time, and it is noted that they only stand in water for short periods with long intervals between. Brackish water can be obtained by boring into the lake bed, which consists of stiff clay, and is of considerable depth. The lake is not permanent, and affords good pasture over a large area in dry seasons. The bed of the lake is lower than the bank of the Lachlan River at Jemalong. The waters of the lake are replenished chiefly from the Lachlan River and the Bland Creek when in flood.

(42) This lake is slightly affected by tides when the mouth of Cudgen Creek is open, but it is more often blocked by sand, and at its best, this entrance is impossible for shipping.

(43) Yellow clay pan. Local catchment, fit for stock when full, brackish when low.

(44) Broad shallow clay pan, occasionally dry.

(45) Fills from overflow of Talyawalka Creek in times of high floods.

(46) Filled by Kerribree Creek in flood and also has local catchment. Generally contains good stock water, brackish when low.

(47) Filled by high Paroo flood, will last 9 months.

(48) Local catchment, thick brackish water when low, suitable for stock when full, cane grass swamp.

(49) One of the Ana Branch system of lakes, which only fills at wide intervals.

(50) One of the Teryawynia Creek System.

(51) Filled by Willandra flood waters.

(52) Generally dry, local catchment. Dry at present and covered with grass.

(53) Broad shallow lagoon periodically covered with water.

(54) Water is not allowed to reach this lake. A dam erected by Crown lessees keeps the flood water out.

(55) Alienated. Sometimes dry.

(56) Fills from the surrounding hills, generally contains water, good and fresh when full, brackish when low.

(57) Now kept dry by a dam across its feeding channel.

(58) Generally dry, fills from the Murray.

(59) Generally dry; fills from the Murray.

(60) Fills from flood waters of Murray.

(61) Generally dry, fills from the Murray, joins Lake Wollare.

(62) This is in reality a big swamp, which holds water only in wet seasons. During 4 years out of every 5 it is held under grazing leases, affording excellent pasturage.

(63) Not alienated. Often dry for years.

(64) Not permanent.

(65) Old clay pan, partially filled up with sand hummocks.

(66) Filled by Darling floods. Will last 6 months.

(67) Generally dry, fills from Lake Condoulpe.

(68) Reserved. Tourist Resort.

(69) Always dry.

(70) The deepest portion is surrounded to the extent of about half a mile by low swamp lands which gradually merge into the lake. Its water is, generally speaking, fresh; it has two outlets indirectly leading into the Pacific, one is Cathie Creek, a shallow, sluggish body of water connecting with the lake of that name. The other is through the lake swamp, thence by Kooloonbung Creek, which flows into Hastings River near Port Macquarie; this creek is a sluggish swampy body of fresh water for part of its course, but a dam erected many years ago in Port Macquarie has influenced its flow, and has excluded tidal waters. The lake is not used for navigation, but its depth is possibly sufficient to carry light draught vessels.

(71) Only gets a supply about once in 20 years. Fills from Darling River flood waters.

(72) Fairly permanent, local catchment.

(73) Local catchment, good stock water when full, often dry, shallow clay pan, brackish water when low.

(74) Filled with Paroo flood waters. Will last an ordinary season.

(75) Large salt clay pan filled about once every 30 years when Kerribree Creek overflows. Contains shallow water when full, evaporation very great.

(76) Generally dry, local catchment.

(77) Within alienated portions 61, 62, and 64.

(78) Generally dry except for small hole in south-east corner.
(79) Generally dry, local catchment, within Tara 18th Section Lease.
(80) Fair water supply, but frequently dry, local catchment, partly within alienated portion 77.
(81) Water not allowed to flow into it.
(82) Reserved, sometimes dry.
(83) A natural extension to Lake Cargelligo. Since the construction of dams on the latter it is now dry and is good grazing country. Partly within Sp. Ls. 07.7, 07.8, 07.9, 07.10.
(84) Partly within Sp. Ls. 08.6 and 08.7. A natural extension of Lake Cargelligo. It used to fill from the Lachlan overflow through that lake. Owing to the construction of dams on Lake Cargelligo it is now dry and is good grazing country providing excellent grass.
(85) Not permanent, only a plain filled by Lachlan flood waters.
(86) Generally dry, local catchment, within alienated portion 19.
(87) Filled in wet seasons only.
(88) Within South Thoronga 18th Section Lease.
(89) Filled by Bunker Creek, lasts an ordinary season.
(90) Filled only in high Lachlan floods brought down Willandra billabong.
(91) Of late years generally dry, fills quickly after rain and empties quickly.
(92) Only looked upon as a plain. Water kept out by a dam on Paika Creek.
(93) Partly reserved. Often dry for years.
(94) Filled with Paroo flood waters.
(95) Coastal, often dry.
(96) This lake is filled by the Narran River in flood and overflows into the Bokhara River. Evaporation very great, often dry.
(97) Fills from Stephen's Creek.
(98) Local catchment. Good brackish stock water when full, salt when low.
(99) Fills with local rainfall.
(100) Very shallow clay pan, land alienated and useless for storage area.
(101) Fills very rarely, is a debouchure of Mount Brown Creek.
(102) Fills from Packsaddle Creek at very wide intervals.
(103) Filled by Darling floods down Talywalka,-will last 6 months.
(104) Permanent water, fills from the Murray. Poon Boon station is on the shore of this lake.
(105) Permanent water, fills from the Murray.
(106) The lake is tidal and salt. It has an outlet into Camden Haven Inlet, thence a short distance by that inlet to the Pacific. It is a clear sheet of water and its shores are readily approachable by solid land. It is fed from inland by Heron's Creek and Queen's Lake River, and is navigable and regularly used for punting timber by vessels drawing from 3 to 4 feet.
(107) In 1894 a regatta was held on this lagoon, but of late years the depth has gradually decreased. It has never been known to overflow.
(108) When full after heavy rain about 10 feet deep at most, sinks rapidly to a normal of about 5 feet greatest depth. Catchment small, and occasionally lake is dry. Surrounding country of a rather sandy character and thickly timbered. This lake has been a great resort of wild-fowl, but closer settlement is to some extent driving them away.
(109) Alienated, dry, this lake is fresh when full.
(110) Alienated, often dry.
(111) Permanent, fills from the Murrumbidgee River, fairly picturesque, within W.R. 3021. Reserve 44162 for preservation of game, set apart for preservation of birds and partly within Tara 18th Section Lease.
(112) Dry except for occasional rain water. No other water since 1870 floods.
(113) Permanent water, fills from the Murray, within W.R. 1960.
(114) Popular health and pleasure resort, noted for beauty and diversity of scenery; abounding with fish.
(115) Fills through Merrimageel Creek from Lachlan River.
(116) A swamp, generally dry within C. and W.R. 2591.
(117) Excellent breeding ground for fish.
(118) Filled by local creeks, will last 12 months. Through sandstorm diversions takes practically all the Worrominta Creek water.
(119) Alienated.
(120) Fairly picturesque, practically permanent, being last dry in 1897. Fills from Murray River (nearest point of which is distant 3 miles), water commencing to flow in when the river is 10 ft. 9 in. high at Swan Hill. In the future this lake may be very useful for storage purposes in connection with any Murray River water conservation scheme. It is covered by W.R. 2109 and is surrounded by "Murray Downs" freehold lands.
(121) Only a plain, but gets water at wide intervals.
(122) Filled by Yancowinna and local creeks after exceptionally heavy rain. Has a large, quick catchment. Ulenia and Yantara Lakes, which are joined together, were filled only once from 1881 to 1896, viz., in 1885, and replenished by a foot or so a few times. The lake is not permanent, evaporation is great, average annual rainfall about 8 inches.
(123) Broad shallow clay pan, rarely flooded in late years, but in 1870 covered to a depth of from 10 to 18 feet.
(124) Shallow clay pan, last year 2 to 3 feet of water stored.
(125) Fills from Murrumbidgee River.
(126) Generally dry, fills from the Murray, within W.R. 2964.
(127) Permanent, filled by Paroo flood waters.
(128) Good, quick local catchment, good stock water.
(129) Fills with run off from surrounding high country, holding capacity improved by a low dam at mouth of effluent creek.
(130) Permanent water, fills from the Murray, within W.R. 1957, joins Lake Goonimur.
(131) Supply channel blocked, not allowed to fill, now used for grazing, excellent grass, partly within W.R. 2977 and T.S.R. 11411, within Poon Boon 18th Section Lease.
(132) Fills from overflow in high Darling floods. Practically empties as waters recede.
(133) Local catchment, often dry, good stock water.
(134) Fills from the Murrumbidgee River. Yanga Station is situated on the shores of this lake. Within W.R. 3020, Reserve 44155 for preservation of game, and Yanga 18th Section Lease.
(135) Often dry.
(136) These are not lakes in a geographical sense, but lagoons connected with the ocean.

3. **Victoria.**—The accompanying information regarding the lakes of Victoria has been furnished by the Survey Branch of the Department of Lands.

(*1.*) *Flora of Victorian Lakes.* The Victorian lakes, owing to variety of conditions such as altitude, depth, geological surroundings, area, etc., have different floras. Salt, brackish, and fresh water types exist, but these are linked by gradations which render the drawing of a hard and fast line of demarcation between types practically impossible, yet the salt marsh of the plain and the mountain tarn are remote and distinct.

The salt lakes may be divided into two groups, viz., inland and estuarine. The former are situated in the western and north-western parts of the State, those of the west occupying basins probably formed by the subsidence of the roof of cavities in the volcanic plain, and those of the north-west are said to be due to saucer-like depressions once filled by river overflow and since replenished, some of them by rainfall and direct surface drainage, and others by streams which flow through them. Many of these northern and western lakes become areas of dried mud or salt pans in summer time.

The estuarine or Gippsland lakes are a series brought into being by the reclamation of a portion of the sea through the formation first of the ridge behind the Ninety-mile Beach by sea and wind agencies, and the subsequent deposition of river silt on the landward side. Continued deposition is decreasing the area of these lakes, which are the remnants of a once large open lagoon. Of those forming individual lakes, one (Lake Wellington) is already isolated except for the river outlet at the eastern end. The arboreal vegetation of the inland lake margins in the western and northern districts is scanty, and is more in evidence near the inlets of creek water, while salaceous plants occupy the immediate margin, and when dry those basins of less saline nature carry a growth of salty-flavoured herbage which is relished by cattle and valued as fodder. Redgum, tea-trees, and other shrubby growths may be found in the vicinity. The vegetation of the Gippsland estuarine lakes varies from the southern mangrove of the muddy shores and flats, and marine weeds of the tidal mouth, to the fringing myrtaceous shrubs and other tea-trees, eucalyptus, etc., which creep down to the water's edge in the comparatively or absolutely fresh water parts towards the river mouths within the estuary.

Of fresh water lakes there are those of natural and artificial origin, and these are scattered throughout the State. The most rare is the mountain tarn. At about 3000 feet altitude a landslip on Mount Wellington, in Gippsland, has blocked a small, steep valley, and the cold, deep water (Lake Karng) is held by steep, rocky walls, from which conspicuous littoral flora is absent.

Another land-locked, fresh water body is the Yan Yean Reservoir, which occupies the site of an old marsh amongst silurian hills of the lowlands at an elevation of only 519 feet above sea level, an embankment having been thrown across a narrow outlet from a considerable drainage area. The surface of this lake—the supply to which is augmented by diverted mountain drainage—approximates to 1360 acres at high level. The depth is 24 feet in parts. The surrounding arboreal vegetation is partly native eucalyptus, banksia, but largely consists of pinus insignis, with many shrubs, native and exotic, interspersed, while a continuous carpet of native kangaroo grass shelters an abundance of native herbaceous and small shrubby plants. The margin of the bays is marked by a growth of sedges, rushes, and reeds, while a variety of water weeds extend across the shallow inlets, and require periodical cutting. Microscopic forms are abundant. Generally speaking, the Yan Yean Reservoir has a richer littoral and purely aquatic vegetation than any other Victorian lake.

Other fresh water lakes are those of the south-western plains, with visible or secret outlets and fresh or slightly brackish water, but these for the most part are poorly vegetated owing to the low banks and the exposure to strong winds, while the geological conditions which result in almost treeless plains as an environment, together with the instability of the water level, do not permit of tree growths at the margins.

Lake Wendouree, at Ballarat, is a shallow, fresh water lake, the area being sheltered physiographically and also by liberal planting of introduced and native trees with which city improvements have surrounded it. The water weeds grow so luxuriantly here as to require special weed cutting to keep the tracks clear for the small pleasure steamers.

Another type of freshwater lake is that resulting from former meanderings of rivers such as the Murray and the Goulburn in their lower reaches across the tertiary plains : portions of old courses, mostly curved in sinuous or horse-shoe pattern, and cut off by silting up when the streams were diverted into new natural channels, the old reaches becoming lagoons or billabongs of considerable extent. The banks of these bear finely developed Eucalyptus rostrata ; large areas along the Murray being reserved as forest land. Other plants (many myrtaceous trees and shrubs) luxuriate there, and smaller plants find shelter among these, while water weeds are in abundance.

Finally, there is a type of lake—small, deep, and almost devoid of vegetation —occupying the old craters of volcanic mounts. Such is Tower Hill Lake at Koroit, in the Western district, where the hollow formed by the falling in of the scoriæ and tuff has filled with water of unknown depth.

(*2.*) *Fauna of the Victorian Lakes.* For the purpose here required the fauna of the Victorian lakes may be roughly divided into three districts, viz : - The Tidal Lakes and Inlets, the Western District Lakes, and the Northern District and Mallee.

Only the more numerous varieties are mentioned below, the list not being in any way exhaustive, and with few exceptions, the species mentioned in one district are to be found in the other two in more or less numbers.

(*a*) *The Tidal Lakes and Inlets* consist principally of the Gippsland Lakes, Lake Tyers, and Mallacoota Inlet. In the vicinity of these lakes native bear, opossum, wallaby and kangaroo may be seen, and at Mallacoota Inlet platypi are perhaps more numerous than elsewhere. Aquatic birds are chiefly the black swan, coot, musk and black duck, and gull, all of which are plentiful. Other birds in these localities are the laughing jackass, magpie, sulphur-crested, leach black, and gang-gang cockatoo, bell-miner, native companion, nankeen heron, crow-shrike, honey eater, hawk, robin, king and pennant parrot, satin bower birds, and wren. The emu is occasionally seen, but the lyre-bird is rarely met with.

(*b*) *Western District Lakes* comprise those lakes in the South Western portion of Victoria and are very numerous in the vicinity of Colac and Camperdown, the largest being Lake Corangamite.

Bandicoot and native cats are occasionally to be seen. The birds that haunt the waters of these lakes are ducks, swans, coot, water-fowl and mountain duck. In the district generally are to be found the magpie, parrot, ground-lark, snipe and plover.

In many places in this district the remains of the extinct diprotodon have been found.

(*c*) *Northern District and Mallee.* Lake Hindmarsh, Albacutya, Tyrrell, Lonsdale and Kow Swamp are among the chief natural depressions in this district. The three

first named are frequently dry and in time of drought may so remain for years. Bird and other life is then very scarce.

The black swan, waterfowl, musk and black duck, coot, black cormorant, white and straw-necked ibis, moorhen and marsh tern frequent the lakes and marshes. The mallee fowl, native companion, nankeen heron, yellow-legged spoonbill, magpie, laughing jackass, hawk, galah, cockatoo and wren are also met with. Wedge-tailed eagles and the emu are occasionally to be found.

(*3*) *Geological Characteristics.* In regard to their geological characteristics, the lakes of Victoria may be divided into four classes, viz.:—(i.) Lakes in basalt plains, (ii.) Lakes in Wimmera and adjoining districts, (iii.) The Gippsland lakes, and (iv.) Lakes formed by flood plains of rivers.

(i.) *Lakes in the Basalt Plains.* Most of these have no streams entering them, and the basalt is of late tertiary age. They may be classified as follows:—

(A) Shallow lakes in hollows due to irregularities in the original volcanic surface, to erosion by wind, or to both; generally small, and irregular in shape. Many of them become dry in summer and are liable to remain so for protracted periods. These lakes are very abundant in the Western District.

(B) Deeper lakes occupying calderas or craters; more or less circular as a rule. The calderas mark the sites of volcanic explosion and possibly have been deepened by the sinking of their floors. There are few if any lakes occupying true craters in Victoria.

(C) Lakes filling subsided areas which have resulted from the adjustment of the surface to the new conditions following the transference of large quantities of rock from underground to the surface in the form of lava flow (basalt).

(ii.) *Lakes in the Wimmera and Adjoining Districts.* The basins are formed in sedimentary rocks of late tertiary age. The lakes are generally shallow, many of them being little more than swamps, and they may become dry for considerable periods. They may be grouped as follows:—

(A) Basins formed by subsidence due to the removal by solution of the underlying limestone or by wind erosion, or by both.

(B) Expansions of rivers caused by the blocking up of shallow valleys by silt or wind-blown material; some caused or assisted by wind erosion.

(iii.) *The Gippsland Lakes.* These have resulted from the growth of the land seawards, owing to the deposition of silt from the Gippsland rivers, combined with the action of the tides, which sweep eastwards along the coast and deflect the river mouths in that direction. The rocks are of tertiary and recent age and the action is still in progress.

(iv.) *Lakes formed by Flood Plains.* These lakes, formed by the building up of flood plains by the rivers, are situated principally near the Murray.

(*4*) *Names, Positions, and Special Features of Victorian Lakes.* The subjoined statement gives particulars in tabular form of Victorian lakes. The numbers attached to the names of some of the lakes in this statement refer to the footnotes at the end of the table. The letters (*f*), (*s*), and (*b*) given in the second column of the table indicate that the lake referred to is either fresh, salt, or brackish. The reference signs given in the column dealing with geological characteristics and probable origin refer to the articulation figures and letters of the preceding paragraph (*3*) hereof, and have the meanings given thereunder.

LAKES OF VICTORIA.

Name.	Position.	Approx. Area. Acres.	Length.		Breadth.		Max. Depth.	Geological Characteristics and Probable Origin.
			Miles.	Chains.	Miles.	Chains.		
Albacutya (1) ...	Weeah, 10 miles N. of Lake Hindmarsh (*f*) ...	14,430	7	40	3	60	15	(ii) B
Albert Park (2) ...	South Melbourne (*f*)	105	1	5	—	35	5	—
Bael Bael	Tatchera, 9 miles W. of Kerang (*f*)	1,075	3	20	—	60	12	(ii) B
Baker	Tatchera, 7 m. S.E. of Castle Donnington (*f*)...	700	1	10	—	70	6	(iv)
Barracoota ...	Croajingolong, 6 miles W. of Cape Howe (*f*)...	600	2	—	—	70	20	(iii)
Beeac	Grenville, 10 miles N. of Colac (*s*)	1,500	2	—	1	50	—	(i) A, C
Birdebush ...	Hampden, 8 miles N.W. of Camperdown (*b*)...	64	—	55	—	15	—	(i) A
Bitterang	Karkarooc 45 miles N.W. of Lake Tyrrell (*f*)	180	—	60	—	30	6	(iv)
Boga	Tatchera, 8 m. S.E. of Castle Donnington (*f*)	2,120	2	23	1	70	12	(iv)
Bolac	Ripon, 6 miles E. of Wickliffe (*f*)	3,500	3	40	2	30	—	(i) C
Bookaar (3) ...	Hampden, 6 miles N.W. of Camperdown (*b*)...	1,075	2	15	1	10	—	(i) A
Booroopki ...	Lowan, 14 m. E. of S. Aust. boundary line (*f*)	1,030	—	50	—	30	—	(ii)
Boort	Gladstone, fed by overflow of Loddon (*f*) ...	1,127	1	70	1	30	6	(ii) A, B
Bringalbert ...	Lowan, 10 miles N.E. of Apsley (*f*)	250	—	65	—	45	—	(ii)
Bullen Merri (4)...	Hampden, 1 mile S.W. of Camperdown (*b*) ...	1,330	1	70	1	65	266	(i) B
Buloke (5)	Borung, 4 miles N. of Donald (*occasionally dry for a series of years*) (*f*)	600	6	—	3	40	8	(ii) B
Bunga	Tambo, 3 miles S.W. of Lake Tyers (*f*) ...	300	8	—	—	20	—	(iii)
Bungaa	Tanjil, Ninety-mile Beach (*b*)	1,000	11	—	—	20	—	(iii)
Buninjon	Ripon, 6 miles S.W. of Ararat (*f*)	430	1	20	—	60	—	—
Burn	Grenville, 10 miles N.E. of Colac (*s*)	130	—	60	—	35	—	(i) A
Burrumbeet (6) ...	Ripon, 10 miles W. of Ballarat (*f*)	5,200	4	30	3	—	6	(i) C
Calvert	Grenville, 5 miles N. of Colac (*s*)...	5,200	12	—	1	50	—	(i) C
Centalla	Karkarooc, 44 miles N.W. of Lake Tyrrell (*f*)	250	—	70	—	50	6	(ii) A
Carchap	Lowan, 20 miles N. of Mostyn (*f*)	220	—	50	—	40	10	(ii) A
Catcarrong ...	Villiers, near township of Winslow (*f*) ...	80	—	45	—	25	—	(i) C, A
Catherine ...	Polwarth, W. boundary of county, 13 miles from sea (*f*)	130	1	5	—	15	—	—
Centre	Lowan, 10 miles N.W. of Mostyn (*f*)	660	1	40	—	50	—	(ii) A
Charm	Tatchera, 10 miles N. of Kerang (*f*)	1,390	1	70	1	20	—	(iv)
Clear	Lowan, 17 miles N. of Mostyn (*f*)	300	—	70	—	50	10	(ii) A
Colac (7)	Polwarth, at Colac (*f*)	6,650	5	—	2	70	—	(i) B
Colongulac (8) ...	Hampden, 3 miles N. of Camperdown (*b*) ...	3,500	4	30	2	30	—	(i) B
Connewarre (9) ...	Grant, 5 miles S.E. of Geelong (*tidal*) ...	3,880	4	50	2	50	—	—
Cooper	Rodney, 9 miles E. of Runnymede (*f*)	2,400	3	30	1	30	10	(iv)
Coorong	Karkarooc, fed by Yarriambiak Creek (*f*) ...	2,000	2	—	1	60	8	(ii) A, B
Cope Cope ...	Kara Kara, 16 miles N.W. of St. Arnaud (*f*) ...	400	1	40	—	50	12	(ii) A
Coragulac ...	Grenville, 7 miles N.W. of Colac (*b*)	90	—	40	—	35	—	—
Corangamite (10)	Grenville (*s*)	57,700	18	—	8	—	10	(i) C
Corringle	Tambo, 2 miles from coast (*f*)	400	2	—	1	10	20	(iii)
Craven	Polwarth, 5 miles N.W. of Cape Otway (*tidal*)	200	1	—	—	30	—	—
Cullens	Tatchera, 8 miles N.W. of Kerang (*f*)	1,660	2	30	1	27	—	(iv)
Cundare	Grenville, 12 miles N. of Colac (*s*)	350	1	70	1	20	—	(i) A, C
Curlip	Croajingolong, fed by overflow of Snowy R. (*f*)	400	1	15	1	—	—	(iii)
Denison	Buln Buln, 28 miles N.E. of Alberton (*f*) ...	350	1	—	—	35	20	(iii)
Dock	Borung, 6 miles S.E. of Horsham (*f*)	370	1	20	—	50	—	(ii) A
Doling Doling ...	Dundas, 3 miles N.E. of Hamilton (*f*)	50	—	40	—	30	6	(i) A
Drung Drung or Taylor's... ...	Borung, 11 miles S.E. of Horsham (*f*)	750	2	40	—	60	17	(ii) A
Duck	Tatchera, 6 miles N.W. of Kerang (*f*)	870	2	20	—	70	6	(iv)
Durdidwarrah ... (Upper Stoney Ck. Reservoir)	Grant, reserved for town of Geelong, 25 miles N.W. (*f*)	—	—	—	—	—	60	—
Elingamite ...	Heytesbury, 11 m. S.W. of Camperdown (*f*)...	800	1	40	1	25	12	(i) B
Elizabeth	Tatchera, 5 miles W. of Kerang (*f*)	200	—	65	—	40	10	(iv)
Eyang	Hampden, 9 miles E. of Chatsworth (*f*) ...	180	—	70	—	45	—	(i) A, C
Furnell	Croajingolong, 8 m. N.W. of Cape Everard (*f*)	800	1	15	—	40	12	(iii)
Garry (11)	Moira, 10 miles N.W. of Shepparton (*f*) ...	1,700	2	40	1	—	—	—
Ghentghen ...	Ripon, 5 miles E. of Wickliffe (*s*)	40	—	30	—	15	—	(i) A
Gherang Gherang	Grant, 3 miles E. of Winchelsea (*f*)	250	—	75	—	40	—	(i) A
Gnarpurt	Hampden, at northern extremity of Lake Corangamite (*s*)	5,800	3	70	3	—	—	(i) A
Gnotuk (12) ...	Hampden, 2 miles W. of Camperdown (*s*) ...	600	1	65	1	5	103	(i) B
Goldsmith ...	Ripon, 7 miles S. of Beaufort (*f*)...	2,130	2	60	1	60	—	(i) C
Goulb'rn Weir (13)	Moira and Rodney (*f*)	4,500	3	20	1	30	42	—
Green	Borung, 7 miles S.E. of Horsham (*f*)	250	—	70	—	60	14	(ii) A
Hattah	Karkarooc, 42 miles N.E. of Lake Tyrrell (*f*)	150	—	40	—	35	14	(iv)
Hindmarsh (14) ...	Lowan, fed by Wimmera River (*f*)	30,000	12	70	5	50	13	(ii) B
Jollicum	Hampden, 4 miles S.W. of Streatham (*f*) ...	130	—	60	—	35	—	(ii) A
Kakydra	Tanjil, 7 miles E. of Sale (*b*)	452	1	—	—	70	—	(iii)
Kanagulk	Lowan, 6 miles N.E. of Mostyn	870	1	50	1	10	10	(ii) A
Kangaroo	Tatchera, 11 miles N.W. of Kerang (*f*)... ...	2,250	3	40	1	30	—	(iv)
Kariah	Hampden, 5 miles N.E. of Camperdown (*b*) ...	350	1	40	—	40	—	(i) A
Karnak	Lowan, 18 miles N.E. of Edenhope (*b*)... ...	300	—	70	—	60	—	(ii)

LAKES OF VICTORIA—(Continued).

Name.	Position.	Approx. Area. Acres.	Length.		Breadth.		Max. Depth.	Geological Characteristics and Probable Origin.
			Miles.	Chains.	Miles.	Chains.		
Karng (15)	Tanjil, 30 miles E. of Woods Point (*f*)	1	—	—	—	—	—	—
Keilambete (16)	Hampden, 15 miles W. of Camperdown (*b*)	770	1	40	1	15	96	(i) B
Kemi Kemi	Lowan, 2 miles S. of Edenhope (*f*)	130	—	60	—	40	—	(ii) A
Kennedy	Villiers, 8 miles N.W. of Penshurst (*b*)	690	1	30	1	30	—	(i) A
Kerferd (17)	Bogong, Beechworth Water Supply (*f*)	100	—	55	—	28	—	—
King (18)	Tanjil, near Bairnsdale, 23 miles N.E. of Seacombe (*tidal*)	22,500	9	—	9	—	65	(iii)
Konardin	Karkarooc, 44 miles N.W. of north shore of Lake Tyrrell (*f*)	300	1	—	—	40	14	(iv)
Koreetnung	Hampden, 6 miles N.E. of Camperdown (*s*)	560	1	30	1	10	—	(i) A
Kow (19)	Gunbower (*f*)	6,800	5	—	2	50	7	(iv)
Laanecoorie Weir (20)	Bendigo and Gladstone (*f*)	1,620	3	40	—	40	37	—
Lalbert (21)	Tatchera, 31 miles W. of Kerang (*f*)	1,250	2	25	1	60	10	(ii) B
Leaghur	Tatchera, 18 miles S.W. of Kerang (*f*)	130	—	50	—	35	8	(ii) B
Learmonth (22)	Ripon, 11 miles N.W. of Ballarat (*f*)	1,200	1	60	1	40	—	(i) C
Linlithgow	Villiers, 8 miles N.W. of Penshurst (*b*)	2,450	2	70	1	70	20	(i)
Little	Tatchera, 10 miles S.W. of Kerang (*f*)	80	—	40	—	40	—	(iv)
Lockie	Karkarooc, 42 miles N.W. of Lake Tyrrell (*f*)	350	1	60	—	50	6	(iv)
Long	Tatchera, 8 miles S.E. of Castle Donnington (*f*)	500	1	40	—	42	21	(iv)
Lonsdale (23)	Borung, 7 miles S.W. of Glenorchy (*f*)	6,000	3	40	2	—	4	(ii) B
Lookout	Tatchera, 14 miles W. of Kerang	130	—	50	—	30	14	(iv)
Mallacoota (Inlet) (24)	Croajingolong, 12 m. W. of Cape Howe (*tidal*)	1,700	5	60	3	—	60	(iii)
Malmsbury (25)	Dalhousie and Talbot, reservoir for northern gold-fields' population, borough of Malmsbury (*f*)	640	2	30	—	60	52	—
Mannaor	Tatchera, fed by overflow of Murray (*f*)	40	—	40	—	30	6	(iv)
Marmal	Gladstone, 12 miles N.E. of Charlton (*f*)	250	1	20	—	45	10	(ii) A, B
Marsh, The	Tatchera, 10 miles N.W. of Kerang (*f*)	1,700	3	—	1	20	6	(iv)
Meering	Tatchera, 11 miles S.W. of Kerang (*f*)	500	1	50	—	50	10	(iv)
Melanydra	Tanjil, 6 miles E. of Sale (*b*)	153	—	50	—	50	—	(iii)
Middle	Tatchera, 4 miles N. of Kerang (*f*)	560	1	—	1	—	—	(iv)
Miga	Lowan, 20 miles N.W. of Mostyn (*f*)	230	—	60	—	45	—	(ii) A
Mitre	Lowan, 20 miles W. of Horsham (*s*)	1,280	1	60	1	50	12	(ii)
Modewarre	Grant, 6 miles E. of Winchelsea (*s*)	1,025	1	70	1	15	—	(i) C
Moodemere	Bogong, 3 miles W. of Rutherglen (*f*)	850	1	30	—	45	—	(iv)
Morea	Lowan, 13 miles N. of Edenhope (*f*)	180	—	55	—	45	—	(ii)
Mournpall	Karkarooc, 44 miles N.W. of Lake Tyrrell (*f*)	600	1	20	—	65	—	(iv)
Mundi	Follet, 1 mile E. of S. Aust. boundary line (*f*)	1,280	1	40	1	—	—	(ii)
Murdeduke	Grenville, 25 miles W. of Geelong (*s*)	2,800	3	40	2	40	—	(i) C
Murphy's	Tatchera (*f*)	560	1	40	—	60	—	(ii) A
Natimuk	Lowan, 14 miles W. of Horsham (*f*)	922	1	70	—	65	—	(ii) A, B
Omeo (26)	Benambra, 10 miles N.E. of Omeo (*f*)	1,966	3	—	1	10	—	—
Ondit	Grenville, 15 miles N. of Colac (*s*)	250	1	—	—	70	—	(i) A, C
Oundell	Hampden, 5 miles S.W. of Streatham (*f*)	180	—	55	—	45	—	(i) A
Paragalmir	Ripon, 6 miles E. of Wickliffe (*s*)	160	1	—	—	35	—	(i) A
Pelican	Tatchera, 2 miles W. of Kerang (*f*)	94	—	25	—	30	—	(ii) A
Pertobe	Villiers, town of Warrnambool (*tidal*)	50	—	40	—	15	—	—
Pine	Borung, 8 miles S.E. of Horsham (*f*)	360	1	5	—	50	16	(ii) A
Pine Hut	Lowan, 22 miles N.W. of Mostyn	200	—	55	—	45	—	(ii) A
Powell	Karkarooc, 36 miles N. of Lake Tyrrell (*f*)	322	—	70	—	55	12	(iv)
Punpundhal	Hampden, W. of Lake Corangamite (*s*)	60	—	35	—	25	—	(i) A
Purgagoolah (27) (Mangan's Inlet)	Croajingolong, 18 m. W. of Cape Howe (*tidal*)	30	—	55	—	20	—	—
Purrumbete (28)	Heytesbury, 4 miles S.E. of Camperdown (*f*)	1,450	1	70	1	50	—	(i) B
Racecourse	Tatchera, 10 miles N.W. of Kerang (*f*)	196	—	50	—	40	—	(iv)
Reedy	Tatchera, 3 miles N. of Kerang (*f*)	550	1	10	—	70	—	(iv)
Reeve (29)	Buln Buln, 2 miles S.E. of Seacombe, on coast (*tidal*)	9,000	36	—	—	70	—	(iii)
Repose	Villiers, 7 miles S.E. of Dunkeld (*f*)	280	1	10	—	50	—	(i) A
Rosine	Grenville, 3 miles W. of Cressy (*s*)	380	1	10	—	70	—	(i) A, C
Round	Tatchera, 10 miles S.W. of Kerang (*f*)	35	—	54	—	34	—	(iv)
Salt	Weeah, 46 miles N.W. of Lake Albacutya (*s*)	4,480	1	40	—	50	—	(ii) A
,,	Grenville, 9 miles N.E. of Colac (*s*)	870	1	65	1	30	—	(i) A
,,	Ripon, 6 miles N.E. of Streatham (*s*)	500	1	45	—	60	—	(i) A
,,	Ripon, 9 miles S. of Beaufort (*s*)	180	—	60	—	45	—	(i) A
,,	Lowan, 12 miles N.W. of Mostyn (*s*)	500	1	10	—	70	—	(ii) A
,,	Lowan, 5 miles N.W. of Natimuk (*s*)	600	1	50	1	—	—	(ii) A
,,	Tatchera, 13 miles N.W. of Kerang (*s*)	700	—	40	—	25	—	(ii) A
,,	Tatchera, 8 miles W. of Kerang (*s*)	100	—	55	—	30	—	(iv)
Sand Hill	Tatchera, 13 miles W. of Kerang (*s*)	160	—	60	—	50	12	(ii) A
Sea Lake	Karkarooc (*f*)	30	—	15	—	15	15	(ii) A
Spectacle (Great)	Tatchera, 10 miles S.W. of Kerang (*f*)	128	—	45	—	38	—	(iv)

LAKES OF VICTORIA—(Continued).

Name.	Position,	Approx. Area. Acres.	Length.		Breadth.		Max. Depth.	Geological Characteristics and Probable Origin.
			Miles.	Chains.	Miles.	Chains.		
Spectacle (Little)	Tatchera, 10 miles S.W. of Kerang (*f*)	43	—	25	—	20	—	(iv)
St. Mary's... ...	Lowan, 4 miles W. of Mt. Arapiles (*f*)	230	1	—	—	40	—	(ii) A
Swan	Mornington, in Phillip Island (*f*)	60	—	30	—	20	—	—
Sydenham (30) ...	Croajingolong, 8 m. E. of Cape Conran (*tidal*)	2,300	3	—	1	70	20	—
Tamboon (31) ...	Croajingolong, 8 m. W. of Cape Everard (*tidal*)	1,150	2	70	1	40	20	—
Tatutong	Hampden, W. of Lake Corangamite (*s*) ...	50	—	30	—	20	—	(i) A
Tchum (32) ...	Tatchera, near Birchip (*f*)	260	—	—	—	—	6	(ii) A
Terang	Hampden, 12 miles W. of Camperdown (*f*) ...	300	—	70	—	50	17	(i) B
Terang Pom ...	Hampden, 11 miles N.E. of Camperdown (*f*)...	500	1	70	—	70	—	(i) A
Tobacco	Tatchera, 10 miles S.W. of Kerang (*f*)	25	—	25	—	15	—	(iv)
Tooliorook ...	Hampden, 4 miles S.E. of Lismore (*b*)... ...	850	1	70	1	10	—	(i) A
Tower Hill ...	Villiers, 7 miles N.E. of Belfast (*f*)	850	1	30	—	50	—	(i) B
Turang-moroke...	Ripon, 9 miles E. of Wickliffe (*s*)	250	—	70	—	50	—	(i) A
Tyers (33)	Tambo, 22 miles west of mouth of Snowy River (*tidal*)	3,950	2	50	1	30	—	(iii)
Tyrrell (34) ...	Karkarooc, fed by overflow of Avoca River (*s*)	42,600	14	40	7	40	15	(iv)
Upper Coliban Reservoir (35) ...	Talbot and Dalhousie (*f*)	574	3	—	—	50	60	—
Victoria (36) ...	Tanjil, 21 miles E. of Sale (*tidal*)	28,500	15	40	3	70	25	(iii)
Wahpool	Karkarooc and Tatchera, 6 miles E. of Lake Tyrrell (*s*)	—	7	—	2	40	—	(iv)
Wallwalla ...	Millewa, 13 m. S.E. of intersection of S. Aust. boundary line by Murray River (*f*)... ...	600	1	40	1	—	12	(iv)
Wallace	Lowan, at Edenhope (*f*)	450	1	10	—	60	12	(ii) A
Wangoom ...	Villiers, 6 miles N.E. of Warrnambool (*f*) ...	200	—	55	—	45	—	(i) B
WarangaB'sin (37)	Rodney (*f*)	11,009	6	10	5	—	21	—
Wartook Res. (38)	Borung (*f*)	2,556	3	50	1	20	29	—
Wau Wauka ...	Croajingolong, near Cape Howe (*f*)	600	1	40	—	40	—	(iii)
Weerancanuck ...	Hampden, 7 miles N.E. of Camperdown (*s*) ...	1,280	2	40	1	15	—	(i) A
Weering	Grenville, 17 miles N. of Colac (*s*)	921	1	60	1	10	—	(i) A, C
Wellington (39) ...	Tanjil, 8 miles E. of Sale (*f*)	34,500	11	—	7	—	—	(iii)
Wendouree (40) ...	Grenville, at Ballarat (*f*)	500	1	20	—	75	8	(i) A
White	Lowan, 8 miles N.W. of Mostyn (*s*)	1,400	2	20	1	15	—	(ii) A
Wirraan	Hampden,9 miles N. of Camperdown (*s*) ...	60	—	45	—	25	—	(i) A
Wooronook ...	Kara Kara, 10 miles W. of Charlton (*f*) ...	250	—	75	—	60	—	(ii) A
Wurdee Boluc ...	Grant, 5 miles S.E. of Winchelsea (*f*)	440	1	70	1	20	—	(i) A
Yallakar	Lowan, 7 miles N.E. of Edenhope (*f*)	870	1	60	—	50	—	(ii)
Yambuk (41) ...	Villiers, 10 miles W. of Belfast (*tidal*)... ...	200	—	50	—	30	—	—
Yando	Tatchera, 22 miles S.W. of Kerang (*f*)	200	—	60	—	40	—	(iv)
Yan Yean (42) ...	Evelyn, reservoir for supply of metropolis, 22 m. N.E.of Melbourne (*an artificial lake*) (*f*)	1,360	2	20	1	50	25	—
Yeeangmaria ...	Ripon, 10 miles E. of Wickliffe (*s*)	75	—	55	—	22	—	—
Yellwell	Karkarooc, 44 miles N.W. of Lake Tyrrell (*f*)	200	—	70	—	40	6	(iv)
Yerang	Karkarooc, 44 miles N.W. of Lake Tyrrell (*f*)	160	—	55	—	35	6	(iv)

NOTES.

(1) Practically dry for several years up to 1909, now receiving overflow from Lake Hindmarsh (1910). Height above sea level, 210 feet.

(2) Ornamental lake, contains English perch (brown and golden) and carp.

(3) 450 feet above sea level.

(4) Enclosed in a ring of hills, 520 feet above sea level. A remarkable feature about this lake is that, although separated from Lake Gnotuk (depth 103 feet) by less than half-a-mile, its surface level is 140 feet higher, and the water, though brackish, is fit for stock, whilst Lake Gnotuk is quite salt. Lake Bullen Merri is supplied by underground springs, &c., and discharges into Lake Gnotuk. This explains the difference in salinity, one having a discharge and the other not. Both supply and discharge are underground.

(5) Now (1910) about 8 feet deep. Fairly flat basin. 438 feet above sea level.

(6) 1270 feet above sea level, occasionally dry, usually contains from 4 to 6 feet of water. English perch, carp and eels.

(7) 367 feet above sea level.

(8) 494 feet above sea level.

(9) Shallow. Barwon River runs through to coast at Barwon Head. Bar at entrance. Navigable by small crafts only. Contains mullet and bream (migratory).

(10) 380 feet above sea level.

(11) Contains English perch and eels.

(12) 380 feet above sea level. See note against Lake Bullen Merri.

(13) Artificial lake made for water supply purposes. Capacity 5,650,000,000 gallons. Masonry and concrete dam. Contains Murray cod, Murray perch (golden, silver and Macquarie) and black fish.

(14) This lake, now full (1910), dries up frequently. 277 feet above sea level.

(15) On Mount Wellington, caused by landslip.

(16) 400 feet above sea level.

(17) Artificial lake.

(18) Most important of the Gippsland lakes; average depth, 21 feet. Receives the waters of the Mitchell, Nicholson, and Tambo Rivers, all of which are navigable for some miles up stream. The Gippsland Lakes include Lakes Wellington, Victoria, King, and Reeve, and all inlets and channels. Except on eastern shore of Lake King, the borders are flat, with abrupt sandy rises, in places attaining a height in some cases of 150 feet. The entrance opposite Kalimna is an artificial one, and was opened in July, 1889. The old or natural inlet of the lakes, situated about two miles to the eastward, is now non-existent, having been filled up by drifting sands. A sand bar exists across the entrance, with a depth of about 14 feet at low water. This limits the navigability of the lakes to vessels of comparatively small tonnage. Range of tides at springs, about 3 feet. Numerous wharves and jetties abound on the shores of these lakes, the principal ones being at Bairnsdale and Sale. A regular service of lake steamers plies to and from these towns, and from Bairnsdale there is a coastal service to Melbourne.

(19) Timber weir, impounds 11,150,000,000 gallons of water.

(20) Artificial lake, impounds 3,812,000,000 gallons of water.

(21) Contains English perch and English trout.

(22) 1328 feet above sea level. Contains English perch and English trout.

(23) Water supply reservoir, impounds 12,380,000,000 gallons. Contains English perch, English trout, and Murray perch.

(24) Divided into two portions, called upper and lower lakes; connected by a narrow passage about one mile long. Sand bar at entrance to lakes, with 3 or 4 feet over it at low water. There is also an inner bar stretching from Captain's Point, over which there is not more than 2 feet at low water. Navigation of this entrance is extremely hazardous, and a good personal knowledge of the locality, combined with great caution, is necessary. A sinuous channel about 13 feet deep communicates with the strait connecting the upper and lower lakes. The strait is about 1000 feet wide, with deep water. Bold, rocky, timber-covered slopes characterise the shores of the lake and river banks. Mullet, skipjack, schnapper, bream, flathead, whiting, garfish, sea trout, and ludrick are found in this lake.

(25) Artificial water supply reservoir, impounds 20,856,000,000 gallons. Contains English perch and English trout.

(26) 2374 feet above sea level, now practically dry.

(27) Occasional shoals of mullet and bream.

(28) Crater 150 feet deep.

(29) One of the Gippsland Lakes. See remarks against Lake King. Contains bream, mullet, whiting, sea trout, sea perch, garfish and ludrick.

(30) Contains mullet, bream and sea perch.

(31) Contains mullet, bream and sea perch.

(32) For Mallee Water Supply, impounds 180,000,000 gallons.

(33) The entrance to Lake Tyers is generally barred across during dry seasons by a sand bank, but after heavy rains the bank is broken, forming one or two channels to the sea. This entrance is not fit for navigation. A settlement for the education and religious instruction of the aborigines is formed on the northern shore of the lake. Contains mullet, bream, sea perch and ludrick.

(34) Usually dry. Can hold from 10 to 15 feet of water. 118 feet above sea level.

(35) Artificial lake, impounds 4,100,000,000 cubic feet of water. Contains English perch and trout.

(36) One of the Gippsland Lakes, average depth about 18 feet. See general note against Lake King. Contains mullet, bream, sea perch and ludrick.

(37) Artificial water supply reservoir. Impounds 60,000,000,000 gallons. Contains English trout, Murray cod and Murray perch.

(38) Impounds 6,560,000,000 gallons. Contains English perch and trout.

(39) One of the Gippsland Lakes. Averages 8 feet in depth at low water. See general remarks against Lake King.

(40) Contains English perch, trout, carp and tench.

(41) Contains mullet, bream, sea perch and ludrick.

(42) Principal reservoir for Melbourne water supply. Impounds 6,400,000,000 gallons. Contains English perch, trout, carp and tench.

4. Queensland.—The tabular statement giving information regarding Queensland lakes has been furnished by the Survey Office of the Lands Department of Queensland. With regard to the lakes in the interior it may be noted that they are nearly all shallow and mostly waterless in dry seasons.

LAKES IN QUEENSLAND.

Name.	Geographical Position.			Approx. Area, Sq. M.	Length Miles.	Breadth Miles.
	Lat. S.	Long. W.	Locality.			
	° ′	° ′				
Numalla, fresh, not permanent (1) ...	28 43	144 19	20 miles N. of Hungerford ...	6½	6	2
Wyarra, salt, not permanent (1) ...	28 42	144 14	23 „ N.W. „ ...	12½	6	3
Bulloo or Berteels, fresh, permanent for about 2 years (1910) (2) ...	28 40	142 26	28 „ N.E. of Wompah ...	16	7	3½
Bullawarra, fresh (3)	27 53	143 35	16 „ N.W. of Thargomindah	1¾	1¾	1¼
Dartmouth (4)	26 5	145 20	46 „ E. of Adavale ...	25	7	5½
Cuddapau, fresh, not permanent (5)	25 2	141 27	77 „ S.W. of Mindorah ...	14	6	4
Moondah „ „ (6)	25 50	140 28	22 „ „ Beetoota ...	46	12	5
Nappanerica	25 53	139 4	18 „ W. of Birdsville ...	6¾	7½	1
Machattie, salt (7)	24 50	139 47	37 „ S.E. of Bedowrie ...	120	17	10
Koolwoo (8)	24 57	139 33	40 „ S. of Bedowrie ...	10	4	2½
Phillipi or Wickamunna, salt (9) ...	24 23	139 0	28 „ W. of Bedowrie ...	126	14	14
Galilee or Jochmus, fresh at N. end, salt S. end; dry in dry seasons (10)	22 24	145 47	56 „ N. of Aramac... ...	80	19	10
Buchanan, salt, permanent (11) ...	21 34	145 54	112 „ S.W. Charters Towers	50	15	4½
Mueller, soda. A clay pan in dry seasons (12)	22 46	145 28	58 „ E. of Muttaburra ...	2	1	1
Barcoorah, fresh, permanent (13) ...	22 31	145 22	50 „ N.E. of Muttaburra ...	1	2	¾
Amaroo (14)	23 29	138 42	65 „ N.W. of Bedowrie ...	2	2	1
Cargoon, fresh, permanent (15) ...	20 8	144 51	64 „ N.E. of Hughenden ...	2½	2½	1½
Yamma Yamma or Mackillop, salt; dry in dry seasons (16)	26 15	144 25	30 „ N.E. of Haddon Corner	275	20	18
Walter Plains	18 21	145 14	50 „ S.W. of Cardwell ...	4	4	1
Eacham, fresh (17)	17 17	145 38	10 „ E. of Atherton ...	¹⁄₁₆	¼	¹⁄₁₆
Barrine, fresh (17)	17 14½	145 39	12 „ N.E. „ ...	¹⁄₁₆	¼	¹⁄₁₆
Cooloolah, fresh	26 12	153 3	On the coast between Brisbane and Maryborough	1	1½	1
Como, salt ... ... (Noosa Lakes)	26 12	153 1	„ „ „	1½	2½	¾
Cootharaba, salt (18) ... (Noosa Lakes)	26 16	153 1	„ „ „	14¾	7	3½
Cooroibah, salt ... ... (Noosa Lakes)	26 21	153 2	„ „ „	2	2	1
Doonella, salt ... ... (Noosa Lakes)	26 24	153 2	„ „ „	¾	1½	¾
Weyba, salt ... ... (Noosa Lakes)	26 27	153 5	„ „ „	4	2½	1½

(1) Salt bush flats around lake. (2) Large tracts of polyguum swamp with sheets of water; enclosed by sand hills formed by strong winds. (3) Blue bush, yapunyah and mulga scrub. (4) Mulga scrub. (5) Cotton bush flats around lake. (6.) Cotton bush, salt bush, blue bush and cane grass. (7) Coolibah, beef wood, spinifex and deadfinish. (8) Coolibah, spinifex and deadfinish. (9) Gidya and coolibah. (10) Gidya, etc. (11) Gum and beef wood. (12) Porcupine grass surrounding the lake. (13) Desert country; naturally supplied by artesian water. (14) Gidya. (15) Box, ironbark and gum. (16) Cotton bush and saline herbs; clayey loam, putty soil full of holes and deep cracks when dry. (17) Tropical scrub; extinct crater. (18) Navigable for small craft.

5. South Australia.—The information in the tabular statement hereunder has been furnished by the Crown Lands Department of South Australia.

LAKES IN SOUTH AUSTRALIA.

Name.	Geographical Position of Centre.		Approx. Area Sq. Miles.	Length Miles (Approx.)	Breadth Miles. (Approx.)	Average Depth Water, Feet.	Height of Bed above or below Sea Level.
	Lat. S.	Long. W.					
	° ′	° ′					
Acraman, salt (1)	32 0	135 26	103	13	12	1 to 3	
Albert, fresh (2)	35 38	139 18	66	14	8	5 to 10	About sea level.
Alexandrina, fresh (3)	35 26	139 12	220	23	13	5 to 15	A few ft. below s.l.
Amadeus (N.T.), salt	24 47	130 57	340	76	12	Shallow	
Barmera, or Bonney on the Murray fresh (4)	34 13	140 27	6½	4	1½	2 to 10	26 ft. above.
Blanche, salt	29 14	139 40	215	25	10	Shallow	150 ft. „
Blue Lake (Mt. Gambier), fresh (5)	37 51	140 46	¼	¼	¼	266	68 ft. above.
Bonney (S.E.), fresh	37 46	140 40	40	17	3	8 to 15	About sea level
Boolka, brackish (6)	30 2	141 0	2	2½	1	Shallow	
Bring, salt	30 17	133 2	3½	3½	1	„	
Cadibarrawirracanna, brackish (7)	28 51	135 30	85	20	6	„	

Name.	Geographical Position of Centre.		Approx. Area Sq. Miles.	Length Miles (Approx.)	Breadth Miles (Approx.)	Average Depth Water, Feet.	Height of Bed above or below Sea Level.
	Lat. S.	Long. W.					
Cadnite, fresh	36 43	140 56	1	1	1	2 to 8	330 ft. above.
Callabonna, salt (1)	29 42	140 3	142	35	7½	Shallow	150 „ „ (approx.)
Cockatoo, fresh (12)	36 46	140 34	¾	½	½		
Coongie, fresh	27 12	140 13	6	4	3	Shallow	
Coogiecooginna, fresh (8)... ...	27 38	139 34	6	7	1	Uncert'n	
Campbell, fresh (9)	30 52	136 36	1	1	1	0 to 6	
Coorong (coastal lagoon) brack. (10)	36 0	139 30	94	80	2½	3 to 10	About sea level
Conway, fresh (6)...	28 16	135 34	30	11	4	Shallow	
De Burgh (N.T.), fresh (7) ...	18 52	135 27	100*	13	9	„	
Dutton, salt	31 47	137 8	22	7	6	„	
Eliza, salt	37 14	139 51	16½	6	4	4 to 8	10 ft. below.
Etamunbanie, fresh	26 16	139 43	20	6	4	Shallow	
Everard, salt (1)	31 30	135 0	310	32	15	„	
Eyre (North), salt (11)	28 30	137 30	2970	90	40	1 to 4	39 ft. below.
Eyre (South), salt (11)	29 18	137 28	460	38	16	1 to 4	39 „ „
Frome, salt (11)	30 44	139 48	930	60	28	1 to 4	160 ft. above.
Frome (S.E.), fresh	37 33	140 9	4½	4	2	4 to 10	About sea level.
Gairdner, salt (1)	31 30	130 0	1840	96	30	Shallow	
George, fresh	37 58	140 0	19½	9	3	6 to 12	6 ft. above.
Gilles, salt	32 50	136 45	70	30	8	Shallow	
Goyder, brackish	27 0	140 11	17	9	4	„	
Greenly, salt	34 20	135 26	8½	4	2½	„	Sightly above.
Gregory, salt (1)	29 0	139 0	113	16	9	„	130 ft. above.
Hamilton, salt	34 0	135 18	9	7	1½	2 to 6	Slightly above.
Hanson, salt	31 0	136 15	24	13	4	Shallow	
Harris, salt	31 4	135 15	115	20	10	„	
Hart, salt	31 9	136 24	60	12	7	„	
Harry, brackish (7)	29 24	138 18	12	7	2½	„	
Hawdon, fresh	37 8	139 55	53½	16	5	4 to 8	18 ft. above.
Hope, fresh	28 24	139 18	13	8	3	2 to 8	
Howitt, fresh (7)	27 38	138 42	24	10	5	Shallow	About sea level.
Kalamurra, fresh	28 0	138 5	36	9	5	„	„
Kittakittaooloo, fresh	28 4	138 12	33	13	5	„	„
Killapanninna, fresh	28 37	138 46	1	2	1	Variable	Slightly below.
Koolkootinnie, fresh	28 0	138 0	36	25	4	Shallow	
Kopperamanna, fresh	28 37	138 41	1	2	1	Variable	Slightly below.
Leake, fresh (5)	37 37	140 35	¾	½	½	33	318 ft. above.
Macfarlane, salt	32 0	136 44	150	37	15	Shallow	
Massacre, fresh (12)	27 23	140 5	3	2½	2	No rec'rd	
McKinlay, fresh	27 25	139 43	2	3	1	2 to 6	
Marroopootanie, brackish ...	26 54	140 7	6	5	2	Shallow	
Nash (N.T.), fresh (13)	20 59	137 57	1	6	½	Deep	
Newland, salt (14)...	33 24	134 53	15	11	1½	Shallow	Slightly above.
Noolyeana, salt	27 55	136 39	20	6	6	„	
Pantoowarinna, salt	27 28	137 47	20	14	2	„	
Pathraootara, fresh	27 24	138 14	7	5	3	Uncert'n	
Peera Peera Poolana, brackish ...	26 42	137 42	150	40	8	Shallow	
Perigundi, brackish	27 47	139 24	2	2½	1	1 to 4	
Phibbs, salt	29 33	137 10	6	4	2	Shallow	
Phillipson, fresh (15)	29 28	134 27	3	2	2	„	
Poolowanna, salt...	26 33	137 32	45	25	2½	„	
Poolyeruninna, salt	27 0	137 58	20	5	5	„	
Peer Mudla Yeppa, fresh... ...	27 35	137 37	18	9	3	„	
Robe, salt	37 12	139 47	1½	1½	1	Verydeep	Surface 2 ft. below.
Short, salt	26 10	139 48	5	4	2	Shallow	
Sir Richard or Lipson, fresh (12)...	27 1	140 23	8	5	3½	No rec'rd	
St. Clair, salt	37 20	139 54	7½	4	3	3 to 10	Surface 5 ft. below.
Strangways, fresh (12)	27 2	140 0	2½	2½	2	No rec'rd	
Sylvester (N.T.), fresh (7)... ...	18 50	135 38	100*	15	9	Shallow	
Tankamarinna, salt	29 0	138 23	5	5	2	„	
Thomas, salt	26 5	137 58	22	10	4	„	
Torrens, salt (1)	31 0	138 0	2230	120	40	„	90 ft. to 112 ft. above.
Uloowaranie, fresh	26 24	139 28	24	11	3	Doubtful	
Wancoocha, salt	28 31	140 10	3	5	1	Shallow	
Wangary, fresh (1)	34 33	135 30	1	1½	1½	„	Slightly above.
Warandirinna, salt (7)	27 28	138 0	73	28	5	„	
Warrakalanna, salt (7)	28 11	139 18	8	3½	3	„	
Weatherstone, fresh (16)	30 17	138 8	2	2	1	„	About 130 ft. above.
Windabout, salt (7)	31 20	137 6	21	13	4	„	
Woods (N.T.), overflow of Newcastle Waters, fresh (6) ...	17 50	133 10	†	‡	‡	1 to 20	
Yaninee, salt	33 0	135 15	7	4	3	Shallow	
Yandiya, fresh (8)	28 33	138 44	1	1½	1	„	About sea level
Younghusband, salt	30 50	136 6	30	12	4	„	

* In wet seasons. † Sometimes covers hundreds of sq. miles. ‡ Uncertain.

(1) Partly dry in summer. (2) Navigable for boats of 50 tons. (3) Navigable for river boats of 200 tons; bed uneven. (4) Highest flood 60 feet above sea level. (5) Volcanic. (6) Occasionally dry. (7) Sometimes dry. (8) Overflow of Cooper's Creek. (9) Not permanent. (10) Partly navigable. (11) Fresh during floods, occasionally dry. (12) Permanent. (13) Part of Herbert River. (14) Partly dry in summer; contains fresh springs. (15) Occasionally dry; salt when low. (16) Dry in summer.

6. **Western Australia.**—Strictly speaking there are in Western Australia only a few lakes of small size, scattered along the coast, west of the Darling Range. The so-called lakes of the interior are merely immense clay-pans or salt marshes, covered with a few inches of water after heavy rains. The accompanying schedule, prepared from information supplied by the Lands Department of Western Australia, gives the whole of the available information in regard to the lakes of this State.

LAKES OF WESTERN AUSTRALIA.

Lake.	Greatest Length.	Greatest Breadth.	Approximate Area.	Geographical Position.	
				Latitude S.	Longitude E.
	Miles	Miles		° ′	° ′
Waukarlycarly (salt)	16	1½	17 sq. m.	21 20	122 50
Dora (salt)	25	5	87 „	22 0	123 0
Blanche	33	2½	58 „	22 30	123 5
Winifred	10½	1½	15 „	22 35	123 32
Disappointment	45	2½	100 „	23 40	123 0
Burnside (fresh)	6½	3½	23 „	25 28	123 10
Buchanan (fresh)	7	5	28 „	25 31	123 10
Kelsall	2	⅝	1 „	25 35	123 10
Augusta	4½	2½	11 „	25 45	122 5
Clearey (brackish)	1½	½	1 „	25 42	123 10
King	3½	3	11 „	25 40	120 0
Gregory	6	2	12 „	25 40	119 55
Nabberu (chain of lakes) ...	60	—	— „	25 40	120 30
Teague	6	2½	15 „	25 50	120 55
Auld	7½	5	37 „	22 28	123 48
Nell	5	1½	6 „	22 32	123 43
Tobin	20	7½	150 „	21 50	125 50
Macdonald	20	12½	250 „	23 30	128 30
Hopkins	15	5	75 „	24 15	128 45
Christopher	6½	1½	9 „	24 50	127 40
Salt Lake	65	25	900 „	24 0	113 50
Rudall	7½	3½	25 „	25 58	122 18
Carnegie	50	2½	125 „	26 1	122 32
Dorothea	12½	3½	40 „	26 15	123 12
Bedford	17	1½	18 „	26 5	123 16
Wells	46	6	140 „	26 42	123 20
Throssell	20	3	50 „	27 38	124 8
Lakes S.W. Throssell	—	—	1½ „	27 46	123 58
Salt Lake N. of Lake Carey ...	12½	2	23 „	28 18	121 55
Darlot	11	4	39 „	27 40	121 12
Way	26	2½	61 „	26 48	120 15
Maitland	25	10	225 „	27 0	121 10
Breaden	15	1½	25 „	25 55	125 35
Seabrook	15	7	72 „	31 0	119 40
Lefroy	30	9	173 „	31 15	121 45
Goongarrie	11	6	47 „	30 0	121 10
Lakes, W. Goongarrie (salt)... ...	11	4	37 „	30 5	121 2
Cowan	52	11	400 „	31 55	121 45
Yindarlgooda	9	9	47 „	30 45	121 52
Le Page	17	5	30 „	30 35	122 10
Roe	4	½	2 „	30 40	122 42
Lake E. Yindarlgooda	7	3	21 „	30 45	122 10
Raeside	133	2	170 „	29 20	120 20
Salt Lake (salt)	73	15	920 „	24 0	113 40
Austin	43	6	320 „	27 40	118 0
Muir	7	2½	15 „	34 29	116 41
Wagin	⅝	⅝	250 acres	33 19	117 21
Goondaring	1½	1⅛	1 sq. m.	33 17	117 30
Parkeyerring	2¼	1	1½ „	33 21	117 21
Quarbing	1	¾	352 acres	33 24	117 19
Norring	2½	1½	2½ sq. m.	33 26	117 17
Little Norring	1½	1	512 acres	33 25	117 18
Flagstaff	1½	1	524 „	33 31	117 15
Queerearrup	1¾	1½	1½ sq. m.	33 31	117 13
Charlie	1½	1	580 acres	33 31	117 11
Salt Lake	1¹	1	1½ sq. m.	33 22	117 22
Murdalmurrin	⅝	⅝	64 acres	33 22	117 25
Lime	½	½	224 „	33 24	117 22
Dumbleyung	7	3	20 sq. m.	33 20	117 40
Taarlbin	6	—	2 „	33 0	117 33
Grace	19	1	59 „	33 10	118 28
Pingrup	2	1	2 „	33 26	118 30
Chinocup	6	2½	11 „	33 30	118 28
Lake N. Grace	6	1	4 „	33 0	118 36
Condinin	2½	2⅜	4¾ „	32 20	118 0
Lake, S.E. Condinin	2	1½	2 „	32 30	118 10
Gillen	—	—	11 „	26 10	124 35

LAKES OF WESTERN AUSTRALIA—(Continued).

Lake.	Greatest Length.	Greatest Breadth.	Approximate Area.	Geographical Position.	
				Latitude S.	Longitude E.
	Miles	Miles		° ′	° ′
Yeo	20	5	90 sq. m.	28 0	124 30
Baker (salt)	7½	3½	22 „	26 55	126 10
Rason...	30	7¾	220 „	28 40	124 30
Lakes N. Eucla (salt)...	—	—	190 „	29 10	128 30
Monger	80	—	150 „	29 20	117 10
Moore...	60	—	449 „	29 30	117 40
Wellhamby	7½	5	37 „	29 10	116 30
Yarra Yarra	16	5	51 „	29 44	115 48
Neakarling or Hinds...	3	1½	4 „	30 45	116 30
Cowcowing	16	3	45 „	31 0	117 10
Ninan	5	2	9 „	31 0	118 22
Dalaroo	1¾	1	1 „	30 55	116 40
Gundoralcarral	1	¾	¾ „	30 37	115 56
Nullewa	½	⅜	100 acres	30 37	115 57
Burrillgabby	2½	2	4 sq. m.	29 7	116 12
Pinjarrega	1¼	¼	430 acres	29 2	116 21
Eganu	1	¼	275 „	30 4	115 8
Karrakin	¼	¼	70 „	30 0	115 6
Dowerin	3½	1	3 sq. m.	31 4	115 30
Koomberkine	13/16	¾	400 acres	31 0	117 4
Brown	—	—	2¼ sq. m.	30 56	117 0
Bidaminna	1¼	⅝	350 acres	31 8	115 33
Mason	25	1½	42 sq. m.	27 35	120 40
Barlee	70	8	550 „	29 5	119 30
Giles	25	8½	179 „	29 40	119 48
Ballard	70	10	220 „	29 24	120 50
Lake E. Ballard	8½	4	30 „	29 40	121 25
Carey	30	11	350 sq. m.	29 0	122 20
Deborah	22	5	46 „	30 50	119 5
Lakes N. Deborah	—	—	6 „	30 25	119 0
Preston	17½	2	18 „	33 0	115 42
Martin Tank	1¾	1	300 acres	32 50	115 42
Clifton	12	⅞	7½ sq. m.	32 48	115 42
Big Lake	1½	¾	500 acres	32 42	115 42
Mears	1	⅝	400 „	32 14	117 20
Jandakot	1⅛	⅞	500 „	32 10	115 56
Jilbup	¾	⅝	250 „	32 10	115 48
Cooloongup	2	⅝	650 „	32 20	115 46
Walyungup	2¾	1	1100 „	32 21	115 46
Richmond	¾	¾	110 „	32 19	115 43
Munster	1	¼	140 „	32 8	115 46
Walliabup	1	¼	256 „	32 6	115 48
Ewlyamartup	¾	⅝	250 „	33 42	117 44
Shaster	3½	1½	4 sq. m.	33 52	120 43
Spencer	3¼	1½	5 „	33 50	121 43
Warden	2	1½	2½ „	33 50	121 44
Bungidup	1½	½	428 acres	33 50	121 56
Gaze	2	2	3 sq. m.	33 46	121 25
Pabelup	3	⅝	800 acres	34 6	119 25
Milyunup	2½	1½	3 sq. m.	34 12	117 40
Munrillup	2	1	1¾ „	34 14	117 41
Tom South	⅝	⅜	130 acres	34 15	117 38
Barracup	¾	¾	½ sq. m.	34 10	117 48
Racecourse	1½	¾	1 „	34 8	117 40
Baligup	1½	1½	1½ „	34 14	117 48
Clabburn	¼	¼	80 acres	34 8	116 50
Toolbrunup	3/20	⅛	100 „	34 5	117 48
Warburton	¾	⅜	236 „	34 48	118 18
Comorup	¾	⅝	204 „	34 49	118 15
Nukennullup	¾	⅝	180 „	34 23	117 17
Poorrarecup Lagoon	1⅜	1	1 sq. m.	34 24	117 14
Nuniup	⅝	¼	150 acres	34 24	117 24
Dowerin Lakes	—	—	500 „	31 16	117 5
Matilda	¼	⅜	100 „	34 25	117 35
Loch Ellen	7/40	3/40	8 „	34 24	117 36
Torditgurrup	3	1¾	2½ sq. m.	34 31	116 43
Myalgelup	1	¾	300 acres	34 33	116 44
Byenup	2	1¼	2 sq. m.	34 29	116 44
Lake N.E. Albany (fresh) ...	1½	¾	384 acres	35 0	117 46
„ „ (brackish) ...	1	7/8	440 „	35 0	117 46
Corimup	¾	⅝	300 „	34 29	116 44
Nunnarup (fresh)	⅜	⅜	64 „	34 22	116 45
Jasper	2	1	1¾ sq. m.	34 24	115 41
Quitjup	⅞	¼	200 acres	34 24	115 36
Nalyerin	7/16	¼	70 „	32 50	116 23
Salt Lake, N. Barlee	54	12	500 sq. m.	28 30	119 40
„ N.E. „	24	5	120 „	28 25	120 30
Johnston Lakes	—	—	225 „	32 20	120 45
Dundas	35	7½	190 „	32 30	122 0

LAKES OF WESTERN AUSTRALIA—(Continued).

Lake.	Greatest Length.	Greatest Breadth.	Approximate Area.	Geographical Position.	
				Latitude S.	Longitude E.
	Miles	Miles		° ′	° ′
Carmondy	1¼	1	1 sq. m.	32 37	119 20
Hurlstone	3	2¼	5 ,,	32 40	119 30
Varley	3⅛	1½	5 ,,	32 42	119 28
O'Connor	3⅛	1½	5 ,,	32 28	119 8
Hutt Lagoon	25	3	10 ,,	28 8	114 16
Pinjar	5⅛	1½	7½ ,,	31 40	115 48
Neerabub	2½	7/16	500 acres	31 42	115 44
Yonderup	⅞	¼	83 ,,	31 32	115 42
Yanchep	4	1	1⅝ sq. m.	31 31	115 42
Carabooda	1¼	5/16	1 ,,	31 38	115 44
Nowergup	⅞	⅜	⅝ ,,	31 39	115 44
Coogee	⅜	⅛	300 acres	31 36	115 42
Mindaree	1	¼	100 ,,	31 36	115 44
Wilgarup	¼	⅛	20 ,,	31 34	115 42
Beonaddy	½	⅛	40 ,,	31 35	115 41
Pindinny	9/16	⅛	40 ,,	31 35	115 41
Banban	⅛	⅛	105 ,,	31 26	115 53
Nambung	5/16	⅛	70 ,,	31 26	115 53
Mungala	5/16	⅛	38 ,,	31 27	115 53
Catambo	⅜	9/40	51 ,,	31 30	115 56
Josephine	9/40	1/16	9 ,,	33 6	115 35
Nomans	1	¾	420 ,,	33 0	117 30
Lukin	7/16	7/16	120 ,,	33 0	117 30
Bokan	⅜	⅛	90 ,,	33 0	117 31
Billy	⅛	⅛	80 ,,	33 0	117 31
Ibis	⅜	3/16	40 ,,	33 0	117 30
White	1½	⅞	500 ,,	33 0	117 28
Yeticup	½	⅛	150 ,,	34 15	116 23
Codarup	7/16	¼	64 ,,	34 17	116 20
Oaljalup	⅜	5/16	60 ,,	34 17	116 20
Nonalling	1	⅛	185 ,,	32 32	117 37
Whitewater	13/16	¾	294 ,,	32 32	117 38
Lake, South (fresh)	11/16	½	153 ,,	32 33	117 38
Yealering (fresh)	⅜	9/16	172 ,,	32 36	117 37
Barnes	⅝	7/16	185 ,,	34 45	117 39
Jerdacuttup Lakes	—	—	4½ sq. m.	33 50	120 18
Salt Lakes near Port Culver (salt) ...	—	—	34 ,,	33 10	124 0
Barragoon	1	⅛	166 acres	31 6	115 38
Jundalup	3	7/8	2 sq. m.	31 45	115 47
Jandabup	1⅛	1	1½ ,,	31 45	115 51
Marginiup	13/16	⅜	¾ ,,	31 44	115 49
Gnangara	1	⅜	288 acres	31 47	115 52
Herdsman	1½	1½	1⅜ sq. m.	31 54	115 48
Monger	1	½	340 acres	31 55	115 50

7. **Tasmania.**—(i.) *General.* The tabular statement given below on the authority of the Tasmanian Lands Department shews particulars of the principal lakes in Tasmania; there are, however, a large number of other lakes of smaller dimensions. Those shewn are situated near the middle of Tasmania and towards the south-east end of a basaltic tableland, which stretches away from the district of Bothwell north-westerly to Mount Bischoff. The lake district is confined to a radius of about 30 miles, and commands an elevation ranging from 2700 feet at Lake Sorell to 3800 feet above sea level at the Great Lake. The lakes form the source of all the more important rivers (with the exception of the Tamar) in the island, viz.:—the Mersey, Forth, Leven, Pieman, King, Gordon and Derwent rivers. The lakes are all freshwater and are becoming well stocked with English and Californian trout; they form natural breeding grounds for swan and wild duck of various kinds. None of the lakes are of crater formation.

(ii.) *Names, Positions, and Special Features of Tasmanian Lakes.* The subjoined statement gives particulars of the principal lakes in Tasmania. With the exception of Lake St. Clair, whose greatest depth is 550 feet, the Tasmanian lakes are shallow, ranging from 6 to about 20 feet in depth.

PRINCIPAL LAKES IN TASMANIA.

Name.	Area in Acres.	Length. Miles.	Breadth. Miles.	Special Remarks. (See Footnote.)
Great Lake	28,400	12	7	(1)
St. Clair	9,500	$8\frac{3}{4}$	$2\frac{3}{4}$	(2)
Echo	7,400	$6\frac{1}{2}$	$3\frac{1}{4}$	—
Arthur	9,000	4	3	—
Woods	2,500	3	$1\frac{3}{4}$	—
Sorell	12,200	5	6	(3)
Crescent	4,000	$3\frac{1}{2}$	$2\frac{1}{2}$	(3)

(1). The Great Lake, which is a favoured resort of tourists, is accessible by vehicle from the railway stations at Apsley, Parattah, and Tunbridge, and is distant 48 miles from the two first-named places, and 41½ miles from the last-named.

(2). Lake St. Clair, from which the River Derwent takes its rise, is about 120 miles from Hobart by road, and 80 miles from the Macquarie Plains railway station. It stretches along the eastern base of Mount Olympus, and is fringed by a dense growth of mountain foliage.

(3). Lakes Sorell and Crescent lie along the routes to Great Lake, being 24 miles from Parattah and 13½ miles from Tunbridge.

§ 3. The Fauna of Australia.

1. **Introduction.**—An authoritative article describing in some detail the principal features of the Fauna of Australia was given in Year Books No. 1 (see pp. 103 to 109) and No. 2 (see pp. 111 to 117), while a synoptical statement appeared in No. 3 (see pp. 73 to 76). Considerations of space will, however, preclude the inclusion in this issue of more than a passing reference to the subject.

§ 4. The Flora of Australia.

1. **Introduction.**—In Year Books No. 1 (see pp. 109 to 114) and No. 2 (see pp. 117 to 122) a fairly complete though brief account was given of the Flora of Australia, and in Year Book No. 3 similiar information in a greatly condensed form will be found on pp. 76 to 78. Space in this issue will not permit of more than a mere reference to preceding volumes.

§ 5. Seismology in Australia.

1. **Introduction.**—The following brief notes regarding the present position of Seismology in Australia have been compiled from data furnished by the Government Astronomer of Victoria (P. Baracchi, Esquire) and the Director of the private observatory attached to Riverview College (Revd. E. Pigot, S.J.), Sydney.

2. **Seismological Installations at State Observatories.**—(i.) *Introductory.* At the present time no State organised service exists in Australia to undertake the work of obtaining earthquake records from localities outside the capitals. According to the latest report of the Committee on Seismology, however, it would not be difficult to recruit a number of voluntary observers in each State, to report seismic phenomena in accordance with a uniform plan. These observers need not necessarily be supplied with any special instrumental equipment.

(ii.) *Sydney Observatory.*—The records at this institution are obtained by means of a Milne seismograph. During the year 1907, 96 tremors were experienced, of which 68 were under 1 mm. amplitude, and in 1908, 82 tremors were recorded, of which 60 were less than 1 mm. amplitude. More than 70 per cent. of the total disturbances recorded were, therefore, only thickenings of the light line.

(iii.) *Melbourne Observatory.*—This observatory possesses a Milne horizontal pendulum, which is located in an underground room in the main building, and records photographically. The average period of the boom ranges from 16″ to 17″, the time scale being 60 minutes per hour, and the angular value of an amplitude of 1 mm. on the records is 0.4″. As is the case with the Sydney Observatory, all seismograms have been measured, classified, and arranged in appropriate records.

(iv.) *Adelaide Observatory.*—A Milne horizontal pendulum seismograph was erected at this Observatory in 1908. The seismograph, which is of the latest pattern, has been set up with the boom in the meridian, the free end of the boom being to the north.

(v.) *Perth Observatory.*—The seismograph at this institution was erected in 1901, and is of the Milne horizontal pendulum type. It is mounted on brick pillars with a marble table-top, the pendulum pointing due north. The pillars rest on a concrete floor about 8 feet underground and 200 feet above sea level. Observations are regularly arranged and classified, and the results sent every six months to the British Association.

(vi.) *Riverview College Observatory, Sydney.*—The seismological cellar (half underground) is situated in a secluded portion of the College grounds remote from any artificial source of vibration. There are three seismometers, each mounted on massive concrete piers with rock foundations. Of the two Wiechert instruments, No. 1 is a 1000 Kilo horizontal seismometer, with astatic pendulum, and E.W. and N.S. Components; and No. 2 is an 80 Kilo vertical seismometer. These were installed early in 1909. A third instrument of the Wiechert pattern was to be erected early in 1910. The Mainka instrument is a horizontal seismometer, with bifilar conical pendulum, and E.W. and N.S. components. The Observatory publishes monthly bulletins giving full records of earth movements.

3. **Publication of Records.**—The Secretary of the Seismological Committee of the British Association collects and publishes the seismic records obtained at observatories in every part of the world (including Australia), and an International Seismological Association also deals with similar records.

4. **Seismic Disturbances in Australia.**—The local earth tremors recorded in Australia have, so far, been of a very minor character, and at no time has there been an earthquake shock of sufficient intensity to cause loss of life or extensive damage to property.

§ 6. The Geology of Australia.

1. **General.**—Independent and authoritative sketches of the geology of each State were given in Year Books No. 1 (see pp. 73 to 103) and No. 2 (see pp. 78 to 111). Want of space has precluded the insertion of these sketches in the present issue of the Year Book, and it has not been considered possible to give anything like a sufficient account of the geology of Australia by presenting here a mere condensation of these sketches. Reference must, therefore, be made to either Year Book No. 1 or No. 2, *ut supra*.

2. **Geological Map of Australia.**—The map of the Geology of Australia on page 86, shews the geographical distribution of the more important geological systems and formations.

§ 7. Climate and Meteorology of Australia.[1]

1. **Introductory.**—In preceding Year Books some account was given of the history of Australian meteorology, including reference to the development of magnetic observations and the equipment for the determination of various climatological records. (See Year Book 3, pp. 79, 80). Space will not permit of the inclusion of this matter in the present issue.

2. **Creation of the Commonwealth Bureau of Meteorology.**—By Chapter 1, Part 5, Section 51, sub-section viii. of the Commonwealth Constitution it is enacted that "Parliament shall, subject to this constitution, have powers to make laws for the peace, order, and good government of the Commonwealth with respect to, *inter alia*, meteorological observations." The Meteorological Act of 1906 was assented to on the 28th August, 1906, and enacts that—The Commonwealth Meteorologist may, subject to the regulations and to the directions of the Minister, be charged with any of the following duties:—

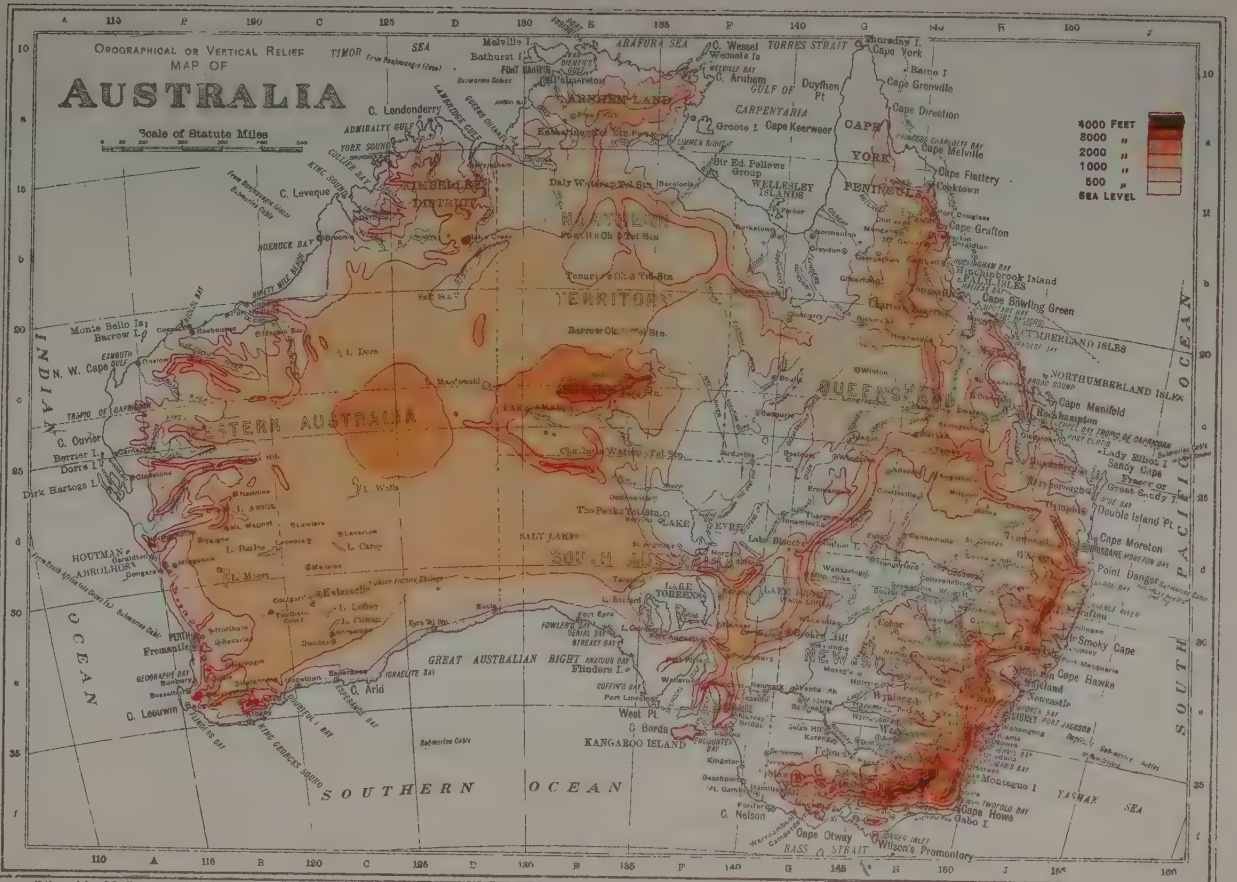
(*a*) The taking and recording of meteorological observations.
(*b*) The forecasting of weather.
(*c*) The issue of storm warnings.
(*d*) The display of weather and flood signals.
(*e*) The display of frost and cold wave signals.
(*f*) The distribution of meteorological information.
(*g*) Such other duties as are prescribed to give effect to the provisions of this Act.

The Governor-General may enter into an arrangement with the Governor of any State in respect of all or any of the following matters:—

(*a*) The transfer to the Commonwealth, on such terms as are agreed upon, of any observatory and the instruments, books, registers, records, and documents used or kept in connection therewith.
(*b*) The taking and recording of meteorological observations by State officers.
(*c*) The interchange of meteorological information between the Commonwealth and State authorities.
(*d*) Any matters incidental to any of the matters above specified or desirable or convenient to be arranged or provided for for the purpose of efficiently and economically carrying out this Act.

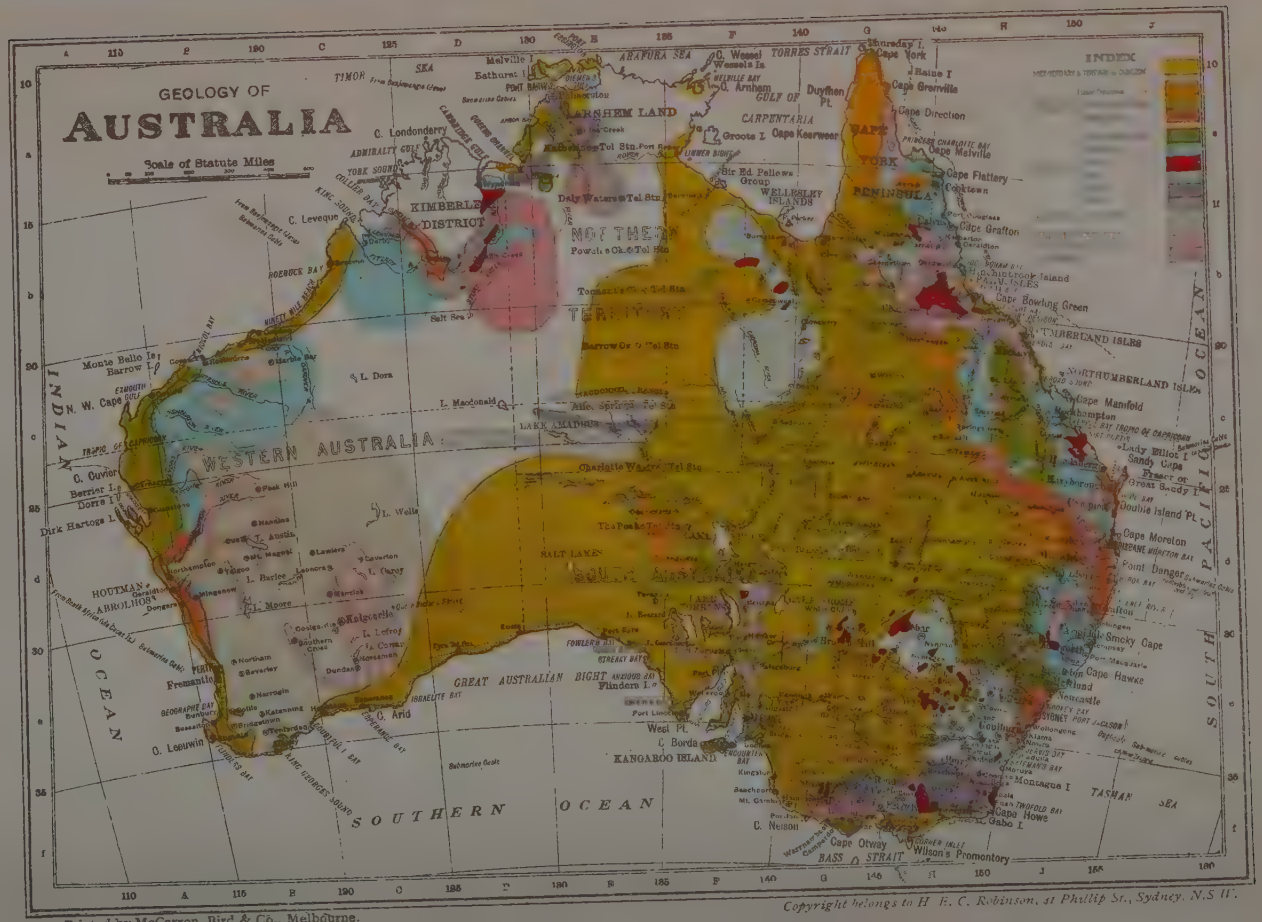
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1. Prepared from data supplied by the Commonwealth Meteorologist, H. A. Hunt, Esquire F.R.M.S.



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AUSTRALIA
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C. Borda
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The Governor-General may enter into any arrangement with the Governments of other countries or any of them for the interchange of meteorological information and any matter incidental thereto between such Governments and the Commonwealth.

The Governor-General may make regulations prescribing all matters necessary or desirable to be prescribed for carrying out or giving effect to this Act.

H. A. Hunt, Esquire, F.R.M.S., was appointed Commonwealth Meteorologist, and entered upon his duties on the 1st January, 1907.

3. **Meteorological Conference.**— Under the presidency of the Commonwealth Meteorologist, a conference of meteorologists was held in the Conference-room of the Bureau of Census and Statistics during the period from the 20th to the 23rd May, 1907, when the following questions were discussed, viz.:—

(i.) The range of practical meteorological observation to be at once undertaken.
(ii.) The expansion of meteorological work to be undertaken in the future.
(iii.) The extent of purely scientific investigations, the undertaking of which is desirable in the interests of meteorology.
(iv.) Meteorological records, reports, and publications.
(v.) Maritime meteorology.
(vi.) The relation of river observation to flood forecasting.
(vii.) The co-operation of the Commonwealth and States Departments.

4. **Organisation of Meteorological Bureau.**—The Central Bureau premises are situated at the corner of Victoria and Drummond Streets, Carlton, Melbourne. Observations are carried on at this site, and also within the Royal Society's grounds, which afford a better exposure for the instruments. Divisional offices are also maintained in the capitals of each of the other States. The central Bureau is divided into five sub-departments, each being under the immediate supervision of assistants, whose duties are distributed as follows:—

Weather predictions, storm warnings, summaries of current weather, and management of the Central Bureau.

Divisional Bureaux and observing stations.

Climatological work and records of the Commonwealth.

Daily observations, entry of same into ledgers, reduction tables for various elements, distribution and collection of information with respect to the maritime branch of the service.

Instrumental stock, standardising and satisfactory working of all instruments before distribution to the observing stations throughout the Commonwealth.

The five assistants have been drawn from the different States, where they held leading positions in the meteorological services prior to the advent of federal control. They now constitute a daily forecast board, presided over by the Commonwealth Meteorologist. The observations made at the chief meteorological stations are telegraphed to the Central Bureau, where they are plotted on charts and discussed by the Board. The results of its deliberations are then wired to the divisional Bureaux, where they are amplified or modified in the light of the latest local indications, and then distributed to the settled districts of the respective States.

5. **Publications, etc.**—The following have been issued daily, viz.:—(i.) Weather charts. (ii.) Rainfall maps. (iii.) Bulletins, Victorian and Interstate, shewing pressure, temperature, wind, rain, cloud extent, and weather.

The Bulletins of Climatology are as follow:—(*a*) Bulletin No. 1.—A general discussion of the climate and meteorology of Australia, illustrated by one map and diagrams.

(*b*) Bulletin No. 2.—A discussion of the rainfall over Australia during the ten years (1897-1906) compared with the normal, illustrated by one map.

Bulletin No. 3.—Notes and statistics of the remarkable flood rains over south-eastern Australia during the winter of 1909, illustrated by five maps and diagrams.

Bulletin No. 4.—A discussion of the monthly and seasonal rainfall over Australia, illustrated by one map and diagram.

Bulletin No. 5.—An investigation into the possibility of forecasting the approximate winter rainfall for Northern Victoria, illustrated by two diagrams.

Commencing with January, 1910, the "Australian Monthly Weather Report," containing statistical records from representative selected stations, with rain maps and diagrams, etc., is being published. It is proposed to publish in an annual volume of meteorological statistics, complete rainfall and other climatological data.

6. **General Description of Australia.**—In the general description of Australia, page 53, it is pointed out that a considerable portion (0.530) of three States of the Australian Commonwealth is north of the tropic of Capricorn, that is to say, within the States of Queensland, the Northern Territory and Western Australia, no less than 1,149,320[1] square miles belong to the tropical zone, and 1,020,720 to the temperate zone. The whole area of the Commonwealth within the temperate zone, however, is 1,825,261[2] square miles, thus the tropical part is about 0.386, or about five-thirteenths of the whole, or the "temperate" region is half as large again as the "tropical" (more accurately 1.509). By reason of its insular geographical position, and the absence of striking physical features, Australia is, on the whole, less subject to extremes of weather than are regions of similar area in other parts of the globe; and latitude for latitude Australia is, on the whole, more temperate.

The altitudes of the surface of Australia range up to a little over 7300 feet, hence its climate embraces a great many features, from the characteristically tropical to what is essentially alpine, a fact indicated in some measure by the name Australian Alps given to the southern portion of the great Dividing Range.

While on the coast the rainfall is often abundant and the atmosphere moist, in some portions of the interior the rainfall is very limited, and the atmosphere dry. The distribution of forest, as might be expected, and its climatic influence, is consequently very variable. In the interior there are on the one hand fine belts of trees, on the other there are large areas which are treeless, and where the air is hot and parched in summer. Again, on the coast, even as far south as latitude 35°, the vegetation is tropical in its luxuriousness and also somewhat so in character. Climatologically, therefore, Australia may be said to present a great variety of features. The various climatological characteristics will be referred to in detail.

7. **Meteorological Divisions.**—The Commonwealth Meteorologist has divided Australia, for climatological and meteorological purposes, into five divisions. The boundaries between these may be thus defined:—(*a*) Between divisions I. and II.,

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1. In the article "Australia" in the Encyclopædia Britannica, Vol. XXX., p. 796, this area is given as 1,145,000 square miles.

2. Given as 1,801,700 square miles in the work above quoted, where, however, the statistics are said "to refer only to the continental States of the Federation, not to Tasmania."

the boundary between South and Western Australia, viz., the 129th meridian of east longitude; (*b*) between divisions II. and III., starting at the Gulf of Carpentaria, along the Norman River to Normanton, thence a straight line to Wilcannia on the Darling River, New South Wales; (*c*) between divisions II. and IV., from Wilcannia along the Darling River to its junction with the Murray; (*d*) between divisions II. and V., from the junction of the Darling and Murray Rivers, along the latter to Encounter Bay; (*e*) between divisions III. and IV., starting at Wilcannia, along the Darling, Barwon, and Dumaresq Rivers to the Great Dividing Range, and along that range and along the watershed between the Clarence and Richmond Rivers to Evans Head on the east coast of Australia; (*f*) between divisions IV. and V., from the junction of the Darling and Murray Rivers along the latter to its junction with the Murrumbidgee, along the Murrumbidgee to the Tumut River, and along the Tumut River to Tumut, thence a straight line to Cape Howe; (*g*) division V. includes Tasmania.

The populations included within these boundaries on 30th June, 1907, may be taken approximately as follows:—

Division	I.	II.	III.	IV.	V.
Population	260,000	481,000	537,000	1,369,000	1,511,000

In these divisions the order in which the capitals occur is as follows:—(i.) Perth, (ii.) Adelaide, (iii.) Brisbane, (iv.) Sydney, (v.) Melbourne, (vi.) Hobart, and for that reason the climatological and meteorological statistics will be set forth in the indicated order in this publication.

(i.) *Special Climatological Stations.* The latitudes, longitudes, and altitudes of special stations, the climatological features of which are graphically represented hereinafter, are as follows:—

SPECIAL CLIMATOLOGICAL STATIONS.

Locality.	Height above Sea Level.	Latitude. S.		Longitude. E.		Locality.	Height above Sea Level.	Latitude. S.		Longitude. E.	
	Feet.	deg.	min.	deg.	min.		Feet.	deg.	min.	deg.	min.
Perth	197	31	57	115	51	Port Darwin ...	97	12	28	130	51
Adelaide ...	140	34	56	138	35	Daly Waters ...	700	16	16	133	23
Brisbane ...	137	27	28	153	2	Alice Springs ...	1926	23	38	133	37
Sydney	146	33	52	151	12	Dubbo ...	863	32	18	148	35
Melbourne ...	91	37	50	144	59	Laverton ...	1530	28	40	122	23
Hobart	160	42	53	147	20	Coolgardie ...	1402	30	57	121	10

8. **Temperatures.**—In respect of Australian temperatures generally it may be pointed out that the isotherm for 70° Fahrenheit extends in South America and South Africa as far south as latitude 33°, while in Australia it reaches only as far south as latitude 30°, thus shewing that, on the whole, Australia has a more temperate climate when compared latitude for latitude with places in the Southern Hemisphere.

The comparison is even more favourable when the Northern Hemisphere is included in the comparison, for in the United States the 70° isotherm extends in several of the western States as far north as latitude 41°. In Europe the same isotherm reaches almost to the southern shores of Spain, passing, however, afterwards along the northern shores of Africa till it reaches the Red Sea, when it bends northward along the eastern shore of the Mediterranean till it reaches Syria. In Asia nearly the whole of the land area south of latitude 40° N. has a higher isothermal value than 70°.

The extreme range of shade temperatures in summer and winter in a very large part of Australia amounts to probably only 81°. In Siberia, in Asia, the similar range is no less than 171°, and in North America 153°, or approximately double the Australian range.

Along the northern shores of the Australian continent the temperatures are very equable. At Port Darwin, for example, the difference in the means for the hottest and coldest months is only 8.7°, and the extreme readings for the year, that is, the highest maximum in the hottest month and the lowest reading in the coldest month, shew a difference of under 50°.

Coming southward the extreme range of temperature increases gradually on the coast, and in a more pronounced way inland.

The detailed temperature results for the several capitals of the States of Australia are shewn in the Climatological Tables hereinafter. It will suffice here to briefly refer to special features.

(i.) *Perth.* Meteorological observations were taken in the Perth Botanical Gardens as far back as 1876, but since the conditions surrounding the instruments and the situation of the station relative to Perth cannot be regarded as quite satisfactory, the more exact climate history of Perth did not properly commence until 1897, when the present Observatory was established. During the period 1897 to 1909, the mean annual shade temperature of Perth was 64°, about a degree higher than that for Sydney and Adelaide, over 5° higher than that for Melbourne, and 10° above that for Hobart, but, on the other hand, 5° below that for Brisbane. The average temperature for the month of January is 73.6°, and for July 55.0°.

The extreme maximum shade record of 107.9° was registered in December, 1904, and the lowest minimum shade temperature was 35.3°, in August, 1908.

(ii.) *Adelaide.* In Adelaide the climate is drier and more sunny than in the other capitals, and, consequently, radiation is less hindered. The extremes of heat are consequently somewhat more marked, especially in the summer months. The mean shade temperature for January is 74.2°, and February 73.9°, and that of July 51.5°. Records of the temperature having reached 100° exist for each of the six summer months from October to March, and of having exceeded 110° exist for each of those months with the exception of March and October. The highest record of shade temperature in Adelaide is 116.3°, registered in January, 1858, and the lowest 32.0°, a range of 84.3°. The freezing point has only once been reached by the shade temperature thermometers, notwithstanding the fact that records have been kept for fifty-two years. Frosts have, however, occurred on the grass (four feet below the shade thermometers) at various times between the beginning of April and the end of November.

(iii.) *Brisbane.* In Brisbane the monthly mean shade temperature ranges from 77.2° in January to 58.0° in July, a difference of 19.2°. The extremes have varied from 108.9° in January to 36.1° in July, viz., through a range of 72.8°.

(iv.) *Sydney.* In Sydney the highest monthly mean is 71.6°, recorded in January, while the lowest, again in July, is 52.3°, giving a range of 19.3°.

The extremes of shade temperature recorded at Sydney over a period of half a century are 108.5° in January, 1896, and 35.9° in July, 1890, *i.e.*, a range of 72.6°.

(v.) *Melbourne.* In Melbourne the January mean shade temperature averages 67.4°, and that of July 48.5°, the highest reading ever recorded being 111.2° in January, 1862, and the lowest 27.0° in July, 1869.

(vi.) *Hobart.* The mean temperature for the hottest month at Hobart is 62.0° in January, and that of the coldest 45.8°, in July, the highest reading ever recorded being 105.2° in December, 1897, and the lowest 27.7°, nearly a degree higher than the lowest experienced in Melbourne.

(vii.) *Hottest and Coldest Parts.* A comparison of the temperatures recorded at coast and inland stations shews that, in Australia as in other continents, the range increases with increasing distance from the coast.

In the interior of Australia, and during exceptionally dry summers, the temperature occasionally reaches or exceeds 120° in the shade, and during the dry winters the major portion of the country to the south of the tropics is subject to ground frosts. An exact knowledge of temperature disposition cannot be determined until the interior becomes more settled, but from data procurable, it would appear that the hottest area of the continent is situated in the northern part of Western Australia about the Marble Bar and Nullagine goldfields, where the maximum shade temperature during the summer sometimes exceeds 100° for days, and even weeks continuously. The coldest part of the Commonwealth is the extreme south-east of New South Wales and extreme east of Victoria, namely, the region of the Australian Alps. Here the temperature seldom, if ever, reaches 100° even in the hottest of seasons.

In Tasmania also, although occasionally hot winds may cross the Straits and cause the temperature to rise to 100° in the low-lying parts, yet the island as a whole enjoys a most moderate and equable range of temperature throughout the year.

(viii.) *Monthly Maximum and Minimum Temperatures.* The mean monthly maximum and minimum temperatures can be best shewn by means of graphs, which exhibit the nature of the fluctuation for each for the entire year. In the diagram (on page 103) for nine representative places in Australia, the upper heavy curves shew the mean maximum, the lower heavy curves the mean minimum temperatures based upon daily observations. On the same diagram the thin curves shew the relative humidities (see next paragraph).

9. **Relative Humidity.**—Next after temperature the degree of humidity may be regarded as of great importance as an element of climate; and the characteristic differences of relative humidity between the various capitals of Australia call for special remark. For nine representative places the variations of humidity are shewn on the graph on page 103, which gives results based upon daily observations of the greatest and least humidity. Hitherto difficulties have been experienced in many parts of Australia in obtaining satisfactory observations for a continuous period of any length. For this reason it has been thought expedient to refer to the record of humidity at first order stations only, where the results are thoroughly reliable. Throughout, the degree of humidity given will be what is known as *relative humidity*, that is, the percentage of aqueous vapour actually existing to the total possible if the atmosphere were saturated.

(i.) *Perth.* At Perth the mean annual humidity at 9 a.m. is 63; the greatest monthly mean is 83, and is in June, and the lowest 45, in January.

(ii.) *Adelaide.* At Adelaide the mean annual humidity is only 56; the mean monthly humidity has been as low as 33 in January and December, and as high as 87 in July.

(iii.) *Brisbane.* In Brisbane the mean annual humidity is 68; the lowest monthly mean recorded is 47, and is in September, and the highest 85 in the months of March and May.

(iv.) *Sydney.* In Sydney the mean annual humidity is 73; the greatest monthly average, which occurred in May, 1889, the wettest month on record during the last forty years, was 90, while the lowest monthly mean, 55, occurred in the month of October, 1867.

(v.) *Melbourne.* The mean annual humidity derived from the 9 a.m. 3 p.m. and 9 p.m. observations in Melbourne is 71; the greatest monthly average 88, in June and July, 1888, and the lowest 49, in December, 1908.

(vi.) *Hobart.* Hobart's mean annual humidity is 71, the highest 92, in June, and the lowest 51, in February.

From the above results, it is seen that, in respect of relative humidity, Sydney has the first place, while Hobart, Melbourne, Brisbane, Perth, and Adelaide follow in the order stated, Adelaide being the driest. The graphs on page 103 shew the annual variations in humidity. It will be observed that the *relative* humidity is ordinarily but not invariably great when the temperature is low.

10. **Evaporation.**—The rate and quantity of evaporation in any territory is influenced by the prevailing temperature, and by atmospheric humidity, pressure and movement. In Australia the question is of perhaps more than ordinary importance; since in its drier regions water has often to be conserved in "tanks"[1] and dams. The magnitude of the economic loss by evaporation will be appreciated from the following records, which have been obtained from either jacketed tanks sunk into the ground, or in the case of Laverton (W.A.) from a jacketed vessel (8 inches in diameter) exposed on the surface.

The average total evaporation at Sydney is 37.42 inches; at Melbourne, 38.40 inches; at Adelaide, 54.63 inches; and at Perth, 65.87 inches, these results being based respectively upon 46, 37, 39, and 10 years' observations. For Brisbane the result is 85.37 inches, based upon 8 years' observations only, and determined by means of Piché's tube evaporimeter.

In the interior of New South Wales the annual evaporation is as high as 84 inches; in Central Australia at Alice Springs the average for 19 years is 97.44 inches; at Coolgardie, Western Australia, the mean for eleven years is 86.43 inches, and at Laverton, in the same State, the yearly amount derived from the last 4 years is 145.32 inches, or over 12 feet.

(i.) *Monthly Evaporation Curves.* The curves shewing the mean monthly evaporation in various parts of the Commonwealth will disclose how characteristically different are the amounts for the several months in different localities. The evaporation for characteristic places is shewn on diagram shewing also rainfalls (see page 104).

(ii.) *Loss by Evaporation.* In the interior of Australia the possible evaporation is often greater than the actual rainfall. Since, therefore, the loss by evaporation depends largely on the exposed area, tanks and dams so designed that the surface shall be a minimum are advantageous. Similarly, the more protected from the direct rays of the sun and from winds, by means of suitable tree planting, the less will be the loss by evaporation: these matters are of more than ordinary concern in the drier districts of Australia.

11. **Rainfall.**—As even a casual reference to climatological maps, indicating the distribution of rainfall and prevailing direction of wind, would clearly shew, the rainfall of any region is determined mainly by the direction and route of the prevailing winds, by the varying temperatures of the earth's surface over which they blow, and by the physiographical features generally.

Australia lies within the zone of the south-east and westerly trade winds. The southern limit of the south-east trade strikes the eastern shores at about 30° south latitude. Hence we find that, with very few exceptions, the heaviest rains of the Australian continent are precipitated along the Pacific slopes to the north of that latitude, the varying quantities being more or less regulated by the differences in elevation of the shores and of the chain of mountains, upon which the rain-laden winds blow, from the New South Wales northern border to Thursday Island. The converse effect is exemplified on the north-west coast of Western Australia from the summer south-east trade winds. Here the prevailing winds, blowing from the interior of the continent instead of from the ocean, result in the lightest coastal rain in Australia.

The westerly trade winds, which skirt the southern shores, are responsible for the very reliable, although generally light, rains enjoyed by the south-western portion of Western Australia, by the south-eastern agricultural areas of South Australia, by a great part of Victoria, and by the whole of Tasmania.

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1. In Australia artificial storage ponds or reservoirs are called "tanks."

(i.) *Factors determining Distribution and Intensity of Rainfall.* The distribution and intensity of rainfall in the interior of the continent, and also to some extent in the areas already mentioned, are governed by the seasonal peculiarities of three distinct atmospheric control systems, the most important of which is, undoubtedly, the anti-cyclonic stream. This stream, which girdles the earth and embraces approximately the region between 15° and 40° south latitude, breaks up into vast elliptically-shaped bodies of circulating atmosphere, measuring frequently 3000 miles in their major and 2000 miles in their minor axes. In passing over Australia from west to east, these great bodies of circulating air cause moist-laden winds to sweep across the continent from the surrounding oceans. The front-circulation brings in winds from the Southern Ocean, and the rear-circulation those from the equatorial seas.

The rain-invoking agent second in order of importance because of its reliability is the well-known "V-shaped depression." The sphere of operation of this latter disturbance is ordinarily the southern half of the continent, although occasionally it may extend its influence to tropical latitudes. The western half of this type of disturbance, with a southerly wind circulation, is the portion from which rain is most frequently to be expected, but occasionally good falls of rain, attended with electrical manifestations, are liberated from the warm eastern portion.

The third agent associated with the production of rain is the tropical depression more popularly known as the "monsoonal depression." This disturbance may be in active evidence for a succession of seasons, and then be conspicuously absent for a number of years, thus raising the question whether, after all, it can be regarded as in any way a distinctive feature of Australian meteorology.

When these disturbances are actively operative in the production of rain, the effect on the country generally, and the economic results for the succeeding season, are very pronounced. The interior of the continent becomes transformed. The plains, which ordinarily have so profound an effect on the heat winds of the summer, are deluged with rain, and respond immediately with an astonishingly luxurious growth of grass and herbage. The air is both tempered in heat, and loses its dryness for considerable periods after their visitations.

The distribution of rain by monsoonal disturbances is, however, very capricious in comparison with that precipitated by the southern "depressions." During some seasons the whole of the northern half of the continent will benefit to a fairly uniform degree, at another time some special region will be favoured. A remarkable example of this peculiarity occurred in 1902, for when monsoonal rains were copiously falling over the major portion of Western Australia, the eastern half of the continent was suffering from severe drought conditions.

During other seasons, tongue-shaped regions extending southwards from the northern shores of the continent will be particularly favoured in regard to rain. These regions may extend to the interior of Western Australia, and simultaneously others may occur in the Central Territory, in Western Queensland, and in the interior of New South Wales.

It is thus obvious that different parts of the continent are mainly dependent upon forms of atmospheric disturbances for what may be called their fundamental rains, and since there is a seasonal tendency for a particular class of storms to predominate, it rarely happens that any year passes in which the rains are universally good. Again, the condition of drought can hardly affect the whole of the continent at the same time. Nevertheless a more than ordinarily fortunate condition in one part of the continent ordinarily implies drought conditions in another, or *vice-versâ*. Thus in New South Wales, monsoonal rains, so beneficial to its north-western districts, rarely extend during the same season to coastal areas, or to Southern Riverina. For this reason it may happen occasionally that sheep may with advantage be sent 500 or 600 miles from the coast for feed and water. Should the southern or antarctic low-pressures be the predominating influence, the country to the south of the Murrumbidgee River is benefit-

ing at the expense of the remainder of the State. A good coastal season ordinarily depends upon an anticyclonic control; when such exists, the country west of the table-lands usually wants water.

A good season for Australia as a whole is dependent upon many circumstances. Not only must the main rain-giving storms be well represented, but other favourable conditions must also coexist. The general rate of translation of the atmosphere across the continent is a factor of the utmost importance. Another is the latitude the cyclones and anti-cyclones are moving in, and, further, the daily or periodic surgings of high and low pressures to and from the equator are also factors of considerable moment.

(ii.) *Time of Rainfall.* Monsoonal rains affect the northern parts of the continent in the summer months, and may continue with diminishing energy for nearly six months of the year. As they penetrate into higher latitudes the period of action is delayed, but is not shortened, though the quantities of the fall materially lessen. Ant-arctic rains are experienced during the winter months of the year, the resultant quantities being reliable and consistently regular. The heaviest totals from this source are precipitated on the west coast of Tasmania. Thus at Mount Lyell the total for one year exceeded 140 inches, and even the average is 115.93 inches.

Anticyclonic rains occur at all times of the year, but more markedly from March to September. They benefit particularly the southern area of the continent, and are responsible for many of the heaviest rainfalls and floods on the coastal districts of New South Wales.

(iii.) *Wettest and Driest Regions.* The wettest known place in Australia is Geraldton, on the north-east coast of Queensland, where the average rainfall for 23 years is no less than 147.78 inches, the maximum yearly total being 211.24 inches and the minimum 69.87 inches. The difference of range between these extremes is 141.37 inches.

The driest known part of the continent is about the Lake Eyre district in South Australia (the only part of the continent below sea level), where the annual average is but 5 inches, and where it rarely exceeds 10 inches for the twelve months.

The inland districts of Western Australia have until recent years been regarded as the driest part of Australia, but authentic observations taken during the past decade at settled districts in the east of that State shew that the annual average is from 10 to 12 inches.

(iv.) *Quantities and Distribution of Rainfall generally.* The departure from the normal rainfall increases greatly and progressively from the southern to the northern shores of the continent, and similarly also at all parts of the continent, subject to capricious monsoonal rains, as the comparisons hereunder will shew. The general distribution is best seen from the map on page 107, shewing the areas subject to average annual rainfalls lying between certain limits. The areas so defined are shewn in the following table:—

DISTRIBUTION OF AVERAGE RAINFALL.

Average Annual Rainfall.	N.S.W.	Victoria.	Queensland.	South Aust.	Northe'n Territ'y.	Western Aust.	Tasmania.	Commonwealth.
	sqr. mls.	sqr. mls.	sqr. mls.	sqr. mls.	sqr. mls.	sqr. mls.	sqr. mls.	sqr. mls.
Under 10 inches	79,629	nil	126,390	309,196	153,226	417,896	nil	1,086,337
10—20 ,,	118,685	36,241	251,150	57,025	181,298	397,416	nil	1,041,815
20—30 ,,	76,217	38,794	175,390	13,257	88,505	109,481	4,242	505,886
30—40 ,,	24,685	8,072	67,310	370	16,765	37,498	7,397	162,097
Over 40 ,,	11,156	4,777	50,260	222	83,826	13,629	14,576	178,446
Total area ...	310,372	87,884	670,500	380,070	523,620	975,920	26,215	2,974,581

Referring first to the southern capitals, it may be noted that the average at Melbourne from 66 years' records is 26.15 inches; the maximum 44.25, and minimum 15.61; the range therefore is 28.64 inches. At Adelaide the average determined from seventy years' totals is 21.10, the maximum 30.87, the minimum 13.43, and the range therefore 17.44 inches. At Hobart 23.36 inches is the average annual rainfall, 40.67 is the highest total for one year, 13.43 is the lowest; thus 27.24 inches is the extreme range. The average for Perth is 33.44 inches, 46.73 being the maximum and 20.48 inches the minimum; the range is therefore 26.25 inches. These figures appear to constitute an exception to the general rule, but it should be mentioned as a possible explanation that records have there been taken only since 1876, whereas the records at the other cities date from 1840 or thereabouts.

Continuing the comparison of rainfall figures, Sydney's average annual total is 48.28 inches, its maximum 82.81 in 1860, and minimum 21.48 in 1849, thus the range is 61.33 inches. At Brisbane the disparities are greater still. There the average is 46.94 inches —a trifle lower than that of Sydney—the annual maximum was 88.26 inches in 1893, the minimum 16.17 inches in 1902, and the range therefore 62.09 inches.

In order to shew how the rainfall is distributed throughout the year in various parts of the continent, the figures of representative towns have been selected. Port Darwin, typical of the Northern Territory, shews that in that region nearly the whole of the rainfall occurs in the summer months, while little or nothing falls in the middle of the year. The figures of Perth, as representing the south-western part of the continent, are the reverse, for while the summer months are dry, the winter ones are very wet. In Melbourne and Hobart the rain is fairly well distributed throughout the twelve months, with a maximum in October in the former, and in November in the latter. The records at Alice Springs and Daly Waters indicate that in the central parts of Australia the wettest months are in the summer and autumn. In Queensland, as in the Northern Territory, the heaviest rains fall in the summer months, but good averages are also maintained during the other seasons.

On the coast of New South Wales, the first six months of the year are the wettest, with slight excesses in April and July; the averages during the last six months are fair and moderately uniform. In general it may be said that one-fourth of the area of the continent, principally in the eastern and northern parts, enjoys an annual average rainfall of from 20 to 50 inches, the remaining three-fourths receiving generally from 10 to 15 inches.

(v.) *Curves of Rainfall and Evaporation.* The relative amounts of rainfall and evaporation at different times through the year are best seen by referring to the graphs for a number of characteristic places. It will be recognised at once how large is the evaporation when water is fully exposed to the direct rays of the sun, and to wind, etc.

(vi.) *Tables of Rainfall.* The table of rainfall for a long period of years for each of the various Australian capitals affords information as to the variability of the fall in successive years, and the list of the more remarkable falls furnishes information as to what may be expected on particular occasions.

RAINFALL AT THE AUSTRALIAN CAPITALS.

Year.	Perth.			Adelaide.			Brisbane.			Sydney.			Melbourne.			Hobart.		
	Amount.	No. of Days.	10 Years' Means.	Amount.	No. of Days.	10 Years' Means.	Amount.	No. of Days.	10 Years' Means.	Amount.	No. of Days.	10 Years' Means.	Amount.	No. of Days.	10 Years' Means.	Amount.	No. of Days.	10 Years' Means.
	in.		in.	in.		in.	in.		in.	in.		in.	in.		in.	in.		in.
1840	...	...	...	24.23	99	...	29.32	...	...	58.52	150	...	22.57	...	...	...	...	...
1	...	...	...	17.96	93	...	49.31	...	...	76.31	142	...	30.18	...	...	13.95	...	...
2	...	...	...	20.32	122	...	28.81	...	...	48.82	137	...	31.16	...	...	23.60	...	...
3	...	...	...	17.19	104	...	51.67	...	...	62.78	168	...	21.54	...	...	13.43	...	...
4	...	...	...	16.88	136	...	63.20	...	...	70.67	157	...	30.74	...	...	26.25	...	...
5	...	...	...	18 83	125	...	39.99	...	...	62.03	132	...	23.93	...	...	16.68	...	...
6	...	...	...	26.89	114	...	31.41	...	41.83	43.83	139	...	30.53	...	...	21.96	...	...
7	...	...	...	27.61	109	...	...	...	(7 yr.)	42.80	142	...	30.18	...	...	14.46	...	...
8	...	...	...	19.74	114	21.07	42.59	...	...	59.17	137	58.33	33.15	...	28.22	23.62	...	19.24
9	...	...	...	25.44	110	(9 yr.)	...	...	...	21.48	140	(9 yr.)	44.25	...	(9 yr.)	33.52	...	(8 yr.)
1850	...	...	...	19.56	84	...	...	...	...	44.88	157	...	26.98	...	...	14.51	...	...
1	...	...	...	30.86	128	...	...	...	...	35.14	142	...	...	...	...	17.98	...	...
2	...	...	...	27.44	118	...	...	...	...	43.78	145	...	...	...	...	23.62	...	...
3	...	...	...	27.08	128	...	...	...	...	46.11	130	...	...	...	...	14.52	...	...
4	...	...	...	15.35	105	...	...	...	...	29.28	136	...	...	...	...	30.54	...	...
5	...	...	...	23.15	124	...	...	...	...	52.85	138	...	28.21	...	...	18.25	...	...
6	...	...	...	24.93	118	...	...	...	...	43.31	116	...	29.76	134	...	22.73	151	...
7	...	...	...	22.15	105	...	...	...	...	50.95	135	...	28.90	138	...	17.20	113	...
8	...	...	...	21.55	107	23.75	43.00	...	...	39.60	139	40.74	26.01	158	...	33.04	129	22.59
9	...	...	...	14.85	95	...	35.00	...	...	42.06	128	...	21.82	156	...	23.31	...	...
1860	...	...	...	19.67	119	...	54.63	144	...	52.81	182	...	25.38	133	...	21.05	...	...
1	...	...	...	24.04	147	...	69.45	155	...	59.36	157	...	29.16	159	...	28.19	...	...
2	...	...	...	21.85	119	...	28.27	98	...	23.98	111	...	22.08	139	...	21.72	...	...
3	...	...	...	23.68	145	...	68.83	146	...	47.08	152	...	36.42	165	...	40.67	...	...
4	...	...	...	19.75	121	...	47.00	114	...	69.12	187	...	27.40	144	...	28.11	...	...
5	...	...	...	15 51	108	...	24.11	52	...	36.29	128	...	15.94	119	...	23.07	...	...
6	...	...	...	20.11	116	...	51.18	142	...	36.81	149	...	22.41	107	...	23.55	...	...
7	...	...	...	19.05	112	...	61.04	112	...	59.68	126	...	25.79	133	...	22.27	...	...
8	...	...	...	19.90	113	19.85	35.98	110	47.55	43.05	127	50.02	18.27	120	24.47	18.08	...	25.00
9	...	...	...	14.74	117	...	54.39	114	...	48.19	134	...	24.58	129	...	23.87	...	...
1870	...	...	...	23 84	119	...	79.06	154	...	64.22	178	...	33.77	129	...	27.53	...	...
1	...	...	...	23.25	137	...	45.45	119	...	52.27	141	...	30.17	125	...	18.25	131	...
2	...	...	...	22.66	146	...	49.22	131	...	37.12	161	...	32.52	136	...	31.76	160	...
3	...	...	...	21.00	139	...	62.02	138	...	73.40	176	...	25.61	134	...	23.43	157	...
4	...	...	...	17.23	127	...	38.71	135	...	63.60	173	...	28.10	134	...	24.09	138	...
5	...	...	...	29.21	157	...	67.03	162	...	46.25	153	...	32.87	158	...	29.25	181	...
6	28.73	100	...	13.43	110	...	53.42	130	...	45.69	156	...	24.04	134	...	23.63	...	...
7	20.48	103	...	24.95	135	...	30.28	119	...	59.66	147	...	24.10	124	...	20.82	...	...
8	39 72	143	29.64	22.08	112	21.24	56.33	134	53.59	49.77	129	54.02	25.36	116	28.11	29.76	...	25.24
9	41.34	106	(3 yr)	20.69	130	..	67.30	157	...	63.19	167	...	19.28	127	...	21.07	...	...
1880	31.79	116	...	22.48	142	...	49.12	134	...	29.51	142	...	28.48	147	...	...	...	...
1	24.78	101	...	18.02	135	...	29.39	117	...	41.09	163	...	24.08	134	...	...	...	...
2	35.68	109	...	15.70	134	...	42.62	121	...	42.28	112	...	22.40	131	...	...	...	...
3	39.65	122	...	26.76	161	...	32.22	114	...	46.92	157	...	23.71	130	...	24.05	160	...
4	31.96	92	...	18.74	138	...	43.49	136	...	44 04	159	...	25.85	128	...	21.55	171	...
5	33.44	110	...	15.89	133	...	26.85	112	...	39.91	145	...	26.94	123	...	28.29	176	...
6	28.90	89	...	14.42	141	...	53.66	152	...	39.43	152	...	24.00	128	...	21.39	189	...
7	37.52	105	...	25.70	164	...	61.54	242	...	60.16	189	...	32.39	153	...	24.31	174	...
8	27.83	117	33.29	14 55	131	19.30	33.08	143	45.93	23.01	132	42.95	19.42	123	24.66	18.45	151	23.65
9	39.96	123	...	30.87	143	...	49.36	155	...	57.16	186	...	27.14	125	...	30.80	180	...
1890	46.73	126	...	25.78	139	...	73.02	162	...	81.42	184	...	24.24	140	...	27.51	173	...
1	30.33	93	...	14.01	113	...	41.68	143	...	55.30	200	...	26.73	126	...	23.25	160	...
2	31.23	122	...	21.53	137	...	64.98	146	...	69.26	189	...	24.96	124	...	...	...	...
3	40.12	145	...	21.49	129	...	88.26	147	...	49.90	208	...	26.80	140	...	27.46	146	...
4	23.72	103	...	20.78	134	...	44.02	143	...	38.22	188	...	22.60	138	...	27.39	151	...
5	33.01	123	...	21.28	130	...	59.11	105	...	31.86	170	...	17.04	131	...	19.93	119	...
6	31 50	103	...	15 17	121	...	44.97	121	...	42.40	157	...	25.16	124	...	20.88	136	...
7	27.17	106	...	15.42	119	...	42.53	115	...	42.52	136	...	25.85	117	...	20.45	153	...
8	31.76	118	33.55	20.75	116	20.71	60.06	131	56.80	43.17	149	51.12	15.61	102	23.61	20.41	164	24.23
9	32.40	107	...	18.84	119	...	38.85	141	...	55.90	172	...	28.87	116	...	20.68	170	(9 yr.)
1900	36.61	124	...	21.68	133	...	34.41	110	...	66.54	170	...	28.09	139	...	19.14	135	...
1	36.75	122	...	18.01	124	...	38.48	110	...	40.10	151	...	27.45	113	...	23.66	147	...
2	27.06	93	...	16.02	123	...	16.17	87	...	43.07	176	...	23.08	102	...	21.92	151	...
3	35.69	140	...	25.47	134	...	49.27	136	...	38.62	169	...	28.43	130	...	25.86	139	...
4	34.35	125	...	20.31	117	...	33.23	124	...	45.93	155	...	29.72	128	...	22.41	139	...
5	34.61	116	...	22.28	131	...	36.76	108	...	35.03	144	...	25.64	129	...	32.09	168	...
6	32.37	121	...	26.51	127	...	42.84	125	...	31.89	159	...	22.29	114	...	23.31	155	...
7	40.12	132	...	17.78	125	...	31.46	119	...	31.32	132	...	22.26	102	...	25.92	167	...
8	30.52	106	34.05	24.56	125	21.15	44.01	125	36.55	45.65	168	43.41	17.72	130	25.36	16.50	149	23.15
9	39.11	107	...	27.69	138	...	34.07	121	...	32.27	181	...	25.86	171	...	27.29	170	...
Aver.			33.44			21.10			46.94			48.28			26.15			23.36
No. of Yrs.			(34)			(70)			(60)			(70)			(66)			(65)

12. **Remarkable Falls of Rain.**—The following are the more remarkable falls of rain in the States of New South Wales, Queensland, Western Australia, and South Australia, which have occurred within a period of twenty-four hours :—

HEAVY RAINFALLS, NEW SOUTH WALES, UP TO 1908 INCLUSIVE.

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins.			ins.
Albion Park ...	8 Feb., 1895	10.00	Leconfield... ...	9 Mar., 1893	14.53
Albury	14 „ 1898	10.70	Liverpool	23 Feb., 1874	10.39
Alme Dorrigo ...	22 Jan., 1893	10.27	Mackeville* ...	23 Feb., 1908	10.00
Anthony	28 Mar., 1887	17.14	Madden's Creek ...	2 „ „	10.36
„	15 Jan., 1890	13.13	Maitland W. ...	9 Mar., 1893	14.79
Arnold Grove ...	28 May, 1889	11.13	Major's Creek ...	14 Feb., 1898	12.32
„ „ ...	20 Mar., 1892	10.08	Mittagong... ...	6 Mar., 1893	11.71
Araluen	14 Feb., 1898	10.51	Morpeth	9 „ „	21.52
„	15 „ „	13.36	Mount Kembla ...	14 Feb., 1898	10.25
Billambil	14 Mar., 1894	12.94	„ „ ...	2 Feb., 1908	10.27
Bowral	6 „ 1893	11.94	Myra Vale ...	14 „ 1898	10.00
Bowraville... ...	22 June, 1898	11.50	Nambucca Heads ...	3 Apr., 1905	10.62
Broger's Creek ...	14 Feb., „	20.05	Nepean Tunnel ...	14 Feb., 1898	12.30
Bulli Mountain ...	19 Mar., 1894	10.45	Newcastle... ...	19 Mar., 1871	11.17
„ „ ...	13 Feb., 1898	17.14	„	9 „ 1893	11.14
Burwood	28 May, 1889	11.75	„	24 Feb., 1908	10.02
Camden	11 July, 1904	10.90	Nowra	11 July, 1904	11.50
Camden Haven ...	22 Jan., 1895	12.23	Parramatta ...	28 May, 1889	11.94
Canley Vale ...	28 May, 1889	10.06	„	20 Mar., 1892	11.01
„ „ ...	20 Mar., 1892	10.85	Port Macquarie ...	9 Nov., 1887	10.76
Castle Hill... ...	28 May, 1889	13.49	Port Stephens ...	9 Feb., 1889	10.15
Cockle Creek ...	23 Feb., 1908	10.45	Prospect	28 May, „	12.37
Colombo Lyttleton ...	5 Mar., 1893	12.17	Raymond Terrace ...	28 Sep., 1903	10.32
Condong	27 „ 1887	18.66	Richmond ...	28 May, 1889	12.18
„	15 Jan., 1890	11.50	Robertson... ...	14 Feb., 1898	10.00
Cookville	1 Apr., 1892	11.31	„	10 July, 1904	10.50
Coramba	11 June, 1893	10.83	Rooty Hill ...	27 May, 1889	11.85
Cordeaux River ...	26 Feb., 1873	10.98	Rylstone	28 „ „	10.26
„ „ ...	3 „ 1890	11.51	Seven Oaks ...	22 June, 1898	11.06
„ „ ...	14 Feb., 1898	22.58	Springwood ...	7 Mar., 1894	10.55
„ „ ...	31 Aug., 1906	10.31	Taree	28 Feb., 1892	12.24
Cudgen	15 Mar., 1894	10.23	Terara	26 „ 1873	12.57
Dapto West ...	14 Feb., 1898	12.05	Tomago	9 Mar., 1893	13.76
Darkes' Forest ...	8 „ 1895	11.10	Tongarra	9 July, 1904	11.10
Dunheved	28 May, 1889	12.40	Tongarra Farm ...	14 Feb., 1898	15.12
Eden	4 „ 1875	10.52	Towamba	5 Mar., 1893	20.00
Fernmount ...	2 Feb., 1890	10.36	Tweed Heads ...	14 Jan., 1890	10.53
„	2 June, 1903	11.29	„ „ ...	14 Mar., 1894	11.40
Goorangoola ...	9 Mar., 1893	10.34	Trial Bay	9 „ 1893	11.13
Guy Fawkes ...	2 June, 1903	11.30	Wollongong ...	26 Feb., 1873	11.00
Hercynia	28 May, 1889	11.85	„ ...	5 Apr., 1882	10.00
Holy Flat	12 Mar., 1887	12.00	Woolgoolga ...	11 June, 1893	10.83
„ „	28 Feb., 1892	12.24	Yellow Rock ...	14 Feb., 1898	11.69
Jamberoo	14 „ 1898	10.92	South Head		
Kareela	20 Oct., 1902	11.73	(near Sydney)...	29 Apr., 1841	20.12
Kempsey	10 Mar., 1893	10.34	„ „ ...	16 Oct., 1844	20.41

* 6.50 inches fell in 2 hours.

HEAVY RAINFALLS, QUEENSLAND, UP TO 1896 INCLUSIVE.

Ayr	20 Sep., 1890	14.58	Bowen Park ...	16 Feb., 1893	10.38
„	25 Mar., 1891	10.19	Brisbane	21 Jan., 1887	18.31
„	26 Jan., 1896	10.50	Bromby Park (Bowen)	14 Feb., 1893	13.28
Beenleigh	21 „ 1887	11.30	„ „ ...	20 Jan., 1894	11.20
Bloomsbury ...	14 Feb., 1893	17.40	Bulimba (Brisbane)...	16 Feb., 1893	10.40
„ ...	27 Jan., 1896	10.52	Bundaberg ...	31 Jan., 1893	10.15
Bowen	13 Feb., 1893	14.65	Burketown ...	15 „ 1891	13.58
„	20 Jan., 1894	11.11	Bustard Head ...	18 Feb., 1888	10.14

HEAVY RAINFALLS, QUEENSLAND—Continued.

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins			ins.
Bustard Head ...	30 Jan., 1893	11.85	Lytton	13 Mar., 1892	10.60
Caboolture	21 „ 1887	10.00	„	16 Feb., 1893	11.74
Cairns	11 Feb., 1889	14.74	Mackay	17 „ 1888	10.10
„	21 Apr., „	12.40	„	15 „ 1893	10.46
„	5 „ 1891	14.08	Macnade Mill (Townsville) ...	28 Mar., 1891	10.61
„	19 Jan., 1892	10.56	„	15 „ 1893	10.50
Caloundra	21 „ 1887	10.50	„	18 Jan., 1894	12.56
Cape Grafton ...	5 Mar., 1896	13.37	„	17 Apr., „	14.26
Cardwell	18 „ 1887	10.15	Marlborough ...	17 Feb., 1888	14.24
„	30 Dec., 1889	12.00	„ ...	29 Jan., 1896	10.84
„	2 Jan., 1890	10.06	Mein	4 Apr., 1895	10.50
„	23 Mar., „	12.00	Mooloolah	13 Mar., 1892	11.53
Clare	26 Jan., 1896	15.30	„	2 Feb., 1893	29.11
Collaroy	30 „ „	14.25	„	9 June, „	11.50
Cooran	1 Feb., 1893	13.62	Mount Perry ...	24 Feb., 1887	10.00
„	9 June, „	10.12	Mundoolun ...	21 Jan., „	17.95
Cooroy	9 „ „	13.60	Musgrave	6 Apr., 1894	13.71
Cressbrook	16 Feb., „	10.65	Nanango	9 June, 1893	10.00
Crohamhurst (Blackall Range)	31 Jan., „	10.78	Nerang	15 „ 1892	12.35
„ „ ...	2 Feb., „	35.71	Netley (Rockhampton)	29 Jan., 1896	11.77
Crohamhurst ...	9 June, „	13.31	North Pine ...	21 „ 1887	11.60
Cryna (Beaudesert) ...	21 Jan., 1887	14.00	„ „ ...	16 Feb., 1893	14.97
Donaldson	27 „ 1891	11.29	Palmwoods ...	4 „ „	12.30
Dungeness	16 Mar., 1893	22.17	Pittsworth ...	11 Mar., 1890	14.68
„	19 Jan., 1894	11.84	Port Douglas ...	5 „ 1887	13.00
„	17 Apr., „	14.00	„ „ ...	12 Feb., 1888	10.00
Eddington (Cloncurry)	23 Jan., 1891	10.33	„ „ ...	20 Jan., 1892	11.50
Emu Park	31 „ 1893	10.00	„ „ ...	23 Feb., 1894	10.25
Esk	21 „ 1887	10.70	„ „ ...	7 Apr., „	10.00
Fassifern	21 „ „	10.20	Ravenswood ...	24 Mar., 1890	17.00
Geraldton	11 Feb., 1889	17.13	„ ...	27 Jan., 1896	10.52
„	31 Dec., „	12.45	Redcliffe	21 „ 1887	14.00
„	25 Jan., 1892	11.10	„	16 Feb., 1893	17.35
„	6 Apr., 1894	16.02	Rockhampton ...	17 „ 1888	10.82
„	3 Mar., 1896	11.42	„	29 Jan., 1896	10.53
Gladstone	18 Feb., 1888	12.37	Sandgate	21 „ 1887	10.50
„	31 Jan., 1893	14.62	„	16 Feb., 1893	14.03
Glen Broughton ...	5 Apr., 1894	18.50	St. Helena ...	16 „ „	11.20
Gold Creek Reservoir	16 Feb., 1893	11.16	St. Helens (Mackay)	24 „ 1888	12.00
Goodna	21 Jan., 1887	11.00	St. Lawrence ...	17 „ „	12.10
Goondi Mill (Gerald'n)	20 „ 1892	11.10	„ „ ...	30 Jan., 1896	15.00
„ „ ...	6 Apr., 1894	15.69	Tabragalba ...	21 „ 1887	10.00
Haughton Valley ...	26 Jan., 1896	18.10	Tambourine Mountain	17 July, 1889	10.91
Holmwood (Woodford)	2 Feb., 1893	16.19	The Hollow (Mackay)	23 Feb., 1888	15.12
Ingham	18 Jan., 1894	12.60	„ „ ...	? Mar., 1891	10.39
„	7 Apr., „	10.10	Tooloombah ...	29 Jan., 1896	11.70
Inkerman	21 Sep., 1890	12.93	Townsville ...	24 „ 1892	19.20
Inneshowen (Johnstone River)	30 Dec., 1889	14.01	Woodford	2 Feb., 1893	14.93
Inskip Point ...	13 Mar., 1892	10.65	Woodlands (Yeppoon)	10 „ 1889	10.00
Kamerunga (Cairns) ...	20 Jan., „	13.61	„ „	26 Jan., 1890	10.22
„ „ ...	23 Feb., 1894	10.10	„ „	25 Mar., „	14.25
Kamerunga ...	6 Apr., „	14.04	„ „	31 Jan., 1893	23.07
„ ...	5 „ 1895	12.31	„ „	30 „ 1896	11.91
„ ...	5 Mar., 1896	11.81	„ „	9 Feb., „	13.97
Lake Nash	10 Jan., 1895	10.02	Yandina	1 „ 1893	20.08
Landsborough ...	2 Feb., 1893	25.15	„	9 June, „	12.70
„ ...	9 June, „	12.80	Yeppoon	31 Jan., „	20.05
Lytton	21 Jan., 1887	12.85	„	30 „ 1896	11.02

HEAVY RAINFALLS, WESTERN AUSTRALIA, UP TO 1909 INCLUSIVE.

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins.			ins.
Balla Balla ...	20 Mar., 1899	6.00	Obagama	17 Feb., 1896	6.30
„ „ ...	21 „ 1899	14.40	„	18 „ „	7.22
Boodaril	3 Jan., 1894	10.03	Point Torment ...	17 Dec., 1906	11.86
„	4 „ „	5.22	Point Cloates ...	20 Jan., 1909	10.87
„	21 Mar., 1899	14.53	Port Hedland ...	7 Feb., 1901	3.56
„	6 Feb., 1901	1.91	„	8 „ „	9.55
„	7 „ „	9.16	Roebourne... ...	3 Apr., 1898	11.44
Bamboo Creek ...	22 Mar., 1899	10.10	„	6 Mar., 1900	10.32
Carlton	11 Jan., 1903	10.64	Tambrey	6 „ „	11.00
Cossack	3 Apr., 1898	12.82	„	3 „ 1903	10.46
„	15 „ 1900	6.89	Thangoo	17-19 Feb.'96	24.18
„	16 „ „	13.23	„	28 Dec., 1898	11.15
Croydon	3 Mar., 1903	12.00	Whim Creek ...	2 Apr., 1898	7.08
Cocos Island ...	29 Nov., „	14.38	„	3 „ „	29.41
„ „ ...	26 Dec., 1907	8.00	„	20 Mar., 1899	8.89
„ „ ...	27 „ „	2.65	„	21 „ „	18.17
„ „ ...	8 July, 1908	10.21	„	6 „ 1900	10.03
„ „ ...	9 „ „	2.75	„	3 „ 1903	10.44
„ „ ...	23 „ „	2.40	Wyndham... ...	27 Jan., 1890	11.60
„ „ ...	24 „ „	7.00	„	11 „ 1903	9.98
„ „ ...	25 „ „	3.85	„	12 „ „	6.64
Derby	29 Dec., 1898	13.09	„	13 „ „	4.20
„	30 „ „	7.14	Yeeda	28 Dec., 1898	8.42
Kerdiadary ...	7 Feb., 1901	12.00	„	29 „ „	6.88
Millstream ...	5 Mar., 1900	10.00	„	30 „ „	6.12
Obagama	16 Feb., 1896	3.95			

HEAVY RAINFALLS, SOUTH AUSTRALIA, UP TO 1909 INCLUSIVE.

Borroloola... ...	14 Mar., 1899	14.00	Pine Creek ...	8 Jan., 1897	10.35
Lake Nash ...	21 „ 1901	10.25	Port Darwin ...	7 „ „	11.67

13. **Snowfall.**—Light snow has been known to fall even as far north, occasionally, as latitude 31° S., and from the western to the eastern shores of the continent. During exceptional seasons it has fallen simultaneously over two-thirds of the State of New South Wales, and has extended at times along the whole of the Great Dividing Range, from its southern extremity in Victoria as far north as Toowoomba in Queensland. During the winter snow covers the ground to a great extent on the Australian Alps for several months, where also the temperature falls below zero Fahrenheit during the night, and in the ravines around Kosciusko and similar localities the snow never entirely disappears.

The antarctic "V"-shaped disturbances are always associated with our most pronounced and extensive snowfalls. The depressions on such occasions are very steep in the vertical area, and the apexes are unusually sharp-pointed and protrude into very low latitudes, sometimes even to the tropics.

14. **Hail.**—Hail falls throughout Australia most frequently along the southern shores of the continent, and in the summer months. The size of the hailstones generally increases with distance from the coast, a fact which lends strong support to the theory that hail is brought about by ascending currents. Rarely does a summer pass without some station experiencing a fall of stones exceeding in size an ordinary hen-egg, and many riddled sheets of light-gauge galvanised iron bear evidence of the weight and penetrating power of the stones.

Hail storms occur most frequently in Australia when the barometric readings indicate a flat and unstable condition of pressure. They are invariably associated with

tornadoes or tornadic tendencies, and on the east coast the clouds from which the stones fall are generally of a remarkable sepia-coloured tint.

15. **Barometric Pressures.**—The mean annual barometric pressure in Australia varies from 29.88 inches on the north coast to 30.06 inches over the central and southern parts of the continent. In January the mean pressure ranges from 29.76 inches in the northern and central areas to 29.94 and 29.95 inches in the southern. The July mean pressure ranges from 29.97 inches at Port Darwin to 30.18 at Alice Springs. Barometer readings, corrected to mean sea-level, have, under anticyclonic conditions in the interior of the continent, ranged from 30.81 inches to as low as 28.44 inches. This lowest record was registered at Townsville during a hurricane on the 9th March, 1903. The mean annual fluctuations of barometric pressure for the capitals of Australia are shewn on page 105.

16. **Wind.**—(i.) *Trade Winds.* The two distinctive wind currents in Australia are, as previously stated, the south-east and westerly trade winds. As the belt of the earth's atmosphere in which they blow apparently follows the sun's ecliptic path north and south of the equator, so the area of the continent affected by these winds varies at different seasons of the year. During the summer months the anticyclonic belt travels in very high latitudes, thereby bringing the south-east trade winds as far south as 30° south latitude. The westerly trade winds are forced a considerable distance to the south of Australia, and are very rarely in evidence in the hot months. When the sun passes to the north of the equator, the south-east trade winds follow it, and only operate to the north of the tropics for the greater part of the winter. The westerly winds, by the same force, are brought into lower latitudes during the same period of the year. They sweep across the southern areas of the continent from the Leeuwin to Cape Howe, and during some seasons are remarkably persistent and strong. They occasionally penetrate to almost tropical latitudes, and though usually cold and dusty inland, are of the greatest service to the country, for being rain-bearing winds, moisture is by their agency precipitated over vast areas in the south of the continent.

(ii.) *Land and Sea Breezes.* The prevailing winds second in order of importance are the land and sea breezes. These generally blow at right angles to the coast-line in their early stages, but are deflected to the north and south in the middle and later periods of the blows.

On the east coast the sea breezes which come in from the north-east, when in full force, frequently reach the velocity of a gale during the afternoon in the summer months, the maximum hourly velocity, ordinarily attained about 3 p.m., not unfrequently attaining a rate of 35 to 40 miles per hour. This wind, although strong, is usually shallow in depth, and does not ordinarily penetrate more than 9 or 12 miles inland.

The land breezes on the east coast blow out from a south-westerly direction during the night.

On the western shores of the continent the directions are reversed. The sea breezes come in from the south-west, and the land breezes blow out from the north-east.

(iii.) *Inland Winds.* Inland, the direction of the prevailing winds is largely regulated by the seasonal changes of pressure, so disposed as to cause the winds to radiate spirally outwards from the centre of the continent during the winter months, and to circulate spirally from the seaboard to the centre of Australia during the summer months.

(iv.) *Prevailing Direction at the State Capitals.* In *Perth*, southerly is the prevailing direction for November to February inclusive, and north-north-easterly for the mid-winter months.

In *Adelaide* the summer winds are from the south-west and south, and in the winter from north-east to north.

In *Brisbane*, south-east winds are in evidence all the year round, but more especially during the months January, February, March and April.

In *Sydney* from May to September the prevailing direction is westerly, and for the remaining seven months north-easterly.

Melbourne winter winds are from north-west to north-east, and those of the summer from south-west to south-east.

At *Hobart* the prevailing direction for the year is from north-west.

Over the greater part of Australia January is the most windy month, *i.e.*, is the month when the winds are strongest on the average, though the most violent wind storms occur at other times during the year, the time varying with the latitude.

17. **Cyclones and Storms.**—(i.) *General.* The "elements" in Australia are ordinarily peaceful, and although severe cyclones have visited various parts, more especially coastal areas, such visitations are rare, and may be properly described as erratic.

During the winter months the southern shores of the continent are subject to cyclonic storms, evolved from the V-shaped depressions of the southern low-pressure belt. They are felt most severely over the south-western parts of Western Australia, to the south-east of South Australia, in Bass Straits, including the coast-line of Victoria, and on the west coast of Tasmania. Apparently the more violent wind pressures from these cyclones are experienced in their northern half, that is, in that part of them which has a north-westerly to a south-westerly circulation.

Occasionally the north-east coast of Queensland is visited by hurricanes from the north-east tropics. During the first three months of the year these hurricanes appear to have their origin in the neighbourhood of the South Pacific Islands, their path being a parabolic curve of south-westerly direction. Only a small percentage, however, reach Australia, the majority recurving in their path before reaching New Caledonia.

Anemometrical records for these storms do not exist, but the fact that towns visited by them have been greatly damaged indicates that the velocity must be very great. Fortunately the area covered by these storms is very small when compared with the southern cyclones, and the region affected during an individual visitation is very limited. The heaviest blows are experienced to the west of the vortex with south-east to south-west winds.

(ii.) *Severe Cyclones.* Very severe cyclones, popularly known as "Willy Willies," are peculiar to the north-west coast of Western Australia from the months of December to March inclusive. They apparently originate in the ocean, in the vicinity of the Cambridge Gulf, and travel in a south-westerly direction with continually increasing force, displaying their greatest energy near Cossack and Onslow, between latitudes 20° and 22° South. The winds in these storms, like those from the north-east tropics, are very violent and destructive, causing great havoc amongst the pearl-fishers. The greatest velocities are usually to be found in the south-eastern quadrant of the cyclones, with north-east to east winds. After leaving the north-west coast, these storms either travel southwards, following the coast-line, or cross the continent to the Great Australian Bight. When they take the latter course their track is marked by torrential rains, as much as 29.41 inches, for example, being recorded at Whim Creek from one such occurrence. Falls of 10 inches and over have frequently been recorded in the interior of Western Australia from similar storms.

Cyclones occasionally develop from incipient monsoonal low-pressures in the interior of the continent. Their formation is apparently materially assisted by the advancing high-pressures to the west of them, for they seldom or never appear without this accompaniment. The velocity and duration of the resultant gales, too, have a distinct relation to the magnitude of pressure in the anticyclones. Evidence of excess of high pressures on such occasions indicates severe gales in the cyclones, and in the case of moderate pressures, moderate gales.

These cyclones do not attain their severest phases until they reach the seaboard. The most violent winds occur in the south-western quadrant, with south-west to south-east winds. The area affected on the coast-line is not usually very great. During the visitation of one of these storms, about 500 miles in diameter, in July, 1903, a strip of

land, only 80 miles in extent, was affected. But so severe was the gale within this region that steamers of from 8000 to 10,000 tons, leaving Port Jackson, were buffeted and tossed about like corks by the turbulent sea. Notwithstanding this, vessels 200 miles to the east lay becalmed and had no indication of the violent atmospheric upheaval relatively so near.

Though storms of this type may occur at any time of the year, they are more frequent during the months of August and September. The velocity of the wind has on one occasion reached the rate of 120 miles per hour.

(iii.) *Southerly Bursters.* The "Southerly Burster" is a characteristic feature of the eastern part of Australia. It is a cool, or cold, wind peculiar to the coastal districts of New South Wales, south of latitude 30°. In a modified form, however, it also appears in the interior of that State, in Victoria, and the western districts of Queensland.

The "Southerly Bursters" invariably follow periods of hot weather, and are a great relief to the population settled over the favoured areas. They occur in all months from August to May inclusive, but most frequently in November. The preceding winds in the early and late summer months are from a north-westerly, and in the midsummer months from a north-easterly direction. A rise in the barometer always takes place before their advent, but no relation has been established between the time this rise begins and the moment of the arrival of the wind itself, neither is there any apparent connection between the velocity of the wind and the rate of gradient of the barometric rise, notwithstanding that records of nearly fifteen hundred "Bursters," extending over a period of forty years, have been analysed with a view of ascertaining if such a connection could be established. All that can be said is that, should the rise be sharp and rapid, the life of the blow will be short, while a slow and gradual one indicates a long and steady blow from the south, after the initial "Burster" has passed. "Southerly Bursters" are usually first noted on the extreme south coast, and travel northward at a rate of 20 miles an hour. The rate of translation has ordinarily no definite relation to the velocity attained by the wind itself.

"Bursters" frequently occur simultaneously at several places along the seaboard, and occasionally they have been known to progress down the coast from north to south. While they may arrive at any time during the day or night, the interval between sundown and midnight is that in which they ordinarily occur.

This type of storm is usually associated with "V"-shaped depressions, but occasionally a condition of relatively high barometric pressures in Victoria will induce their occurrence. It is most frequent during seasons of sporadic rains, and very rare during good years in the interior. In the summer of 1890, the year of the great Darling River flood, only sixteen visitations occurred, and even these were of a very mild character. The series of good years in the interior of Australia, since 1903, has been remarkable for the small annual number of "southerly bursters."

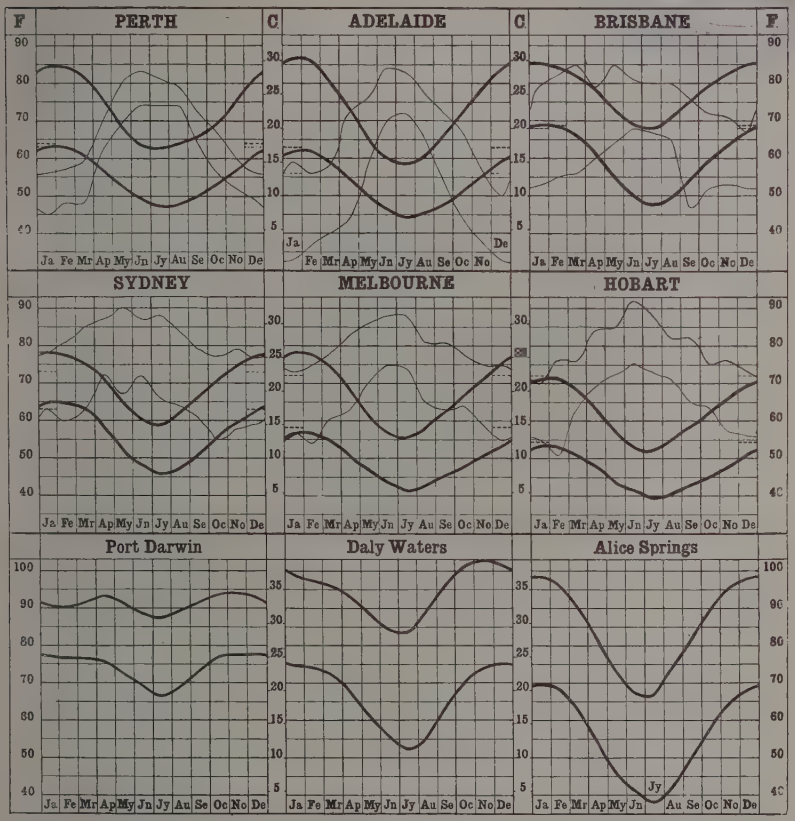
The greatest number ever experienced in a single summer was sixty-two, the average being thirty-two.

In the months of December and January they are usually short lived, and two may occur within the twenty-four hours. In the early and late summer months the intervening periods of warm weather are longer, and the winds are longer sustained, the energy being supplied from the more pronounced high pressures prevailing at these seasons of the year. The velocity varies from a rate of a few miles an hour to over 80 miles per hour, the maximum puffs occurring about an hour after the arrival of the burster. During recent years there has been a falling-off both in their number and strength, the reason for which is not yet understood, but it is suspected that the gradual extension of the agricultural and pastoral industries to the interior of the country may be one of the causes of the change.

Winds of a like character, and possibly derived from similar atmospheric actions and conditions, are—

In Europe—"The Bora," a sharp, cold north-east wind, which blows from the Croatian and Illyrian Mountains along the coast of Dalmatia from Trieste southward;

GRAPHS SHEWING ANNUAL FLUCTUATIONS OF MEAN MAXIMUM AND MINIMUM TEMPERATURE AND HUMIDITY IN SEVERAL PARTS OF THE COMMONWEALTH OF AUSTRALIA.



Explanation of the Graphs of Temperature and Humidity.—In the above graphs, in which the heavy lines denote 'temperature' and the thin lines 'humidity,' the fluctuations of mean temperature and mean humidity are shewn throughout the year. These curves are plotted from the data given in the Climatological Tables hereinafter. The temperatures are shewn in degrees Fahrenheit, the inner columns giving the corresponding values in Centigrade degrees. Humidities have not been obtained for Port Darwin, Daly Waters, and Alice Springs.

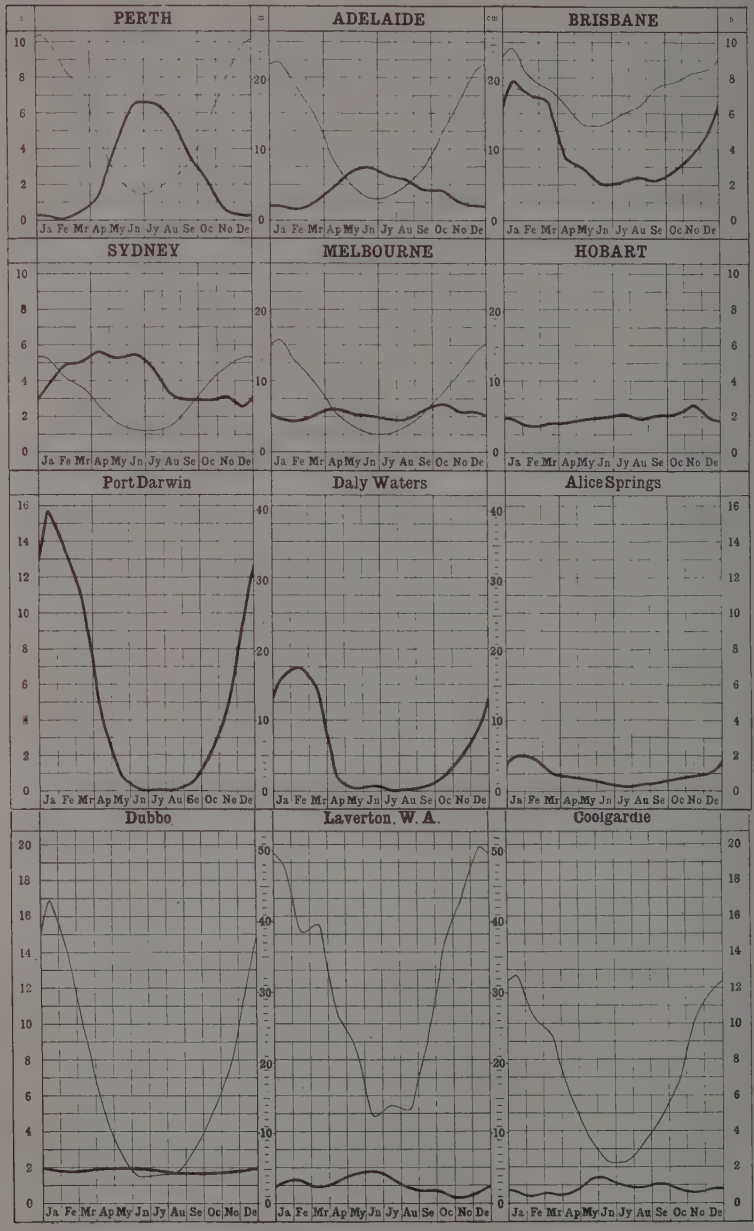
For the thin lines the degree numbers represent relative humidities, or the actual percentages of actual saturation on the total for the respective temperatures.

In both cases the upper line represents the mean of the maximum, and the lower line the mean of the minimum results; thus the curves also shew the progression of the range between maximum and minimum temperatures throughout the year.

Interpretation of the Graphs.—The curves denote mean monthly values. Thus, taking, for example, the temperature graphs for Perth, the mean readings of the maximum and minimum temperatures for a number of years on 1st January would give respectively about 83° Fahr. and 62° Fahr. Thus the mean range of temperature on that date is the difference, viz., 21°. Similarly, observations about 1st June would give respectively about 66° Fahr. and 51° Fahr., or a range of 15°.

In a similar manner it will be seen that the mean of the greatest humidities, say on 31st March, is about 64 and the mean of the least humidities 55; in other words, at Perth, the degree of saturation of the atmosphere by aqueous vapour ranges on 31st March between 64 % and 55 %.

GRAPHS SHEWING ANNUAL FLUCTUATIONS OF MEAN RAINFALL AND MEAN EVAPORATION IN SEVERAL PARTS OF THE COMMONWEALTH OF AUSTRALIA.



(For Explanation see next page.)

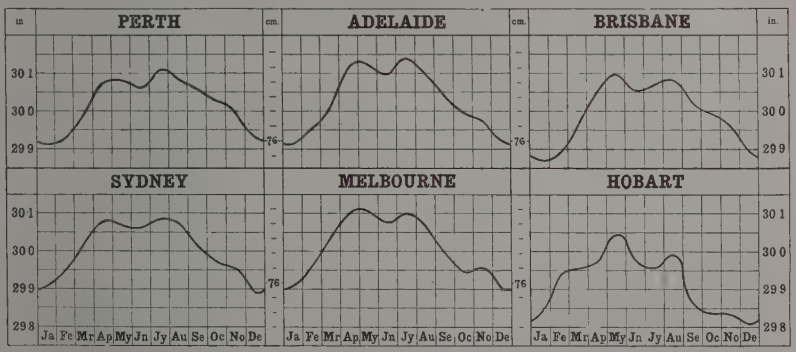
Explanation of the Graphs of Rainfall and Evaporation.—On the preceding graphs thick lines denote rainfall and thin lines evaporation, and shew the fluctuation of the mean rate of fall *per month* throughout the year. The results, plotted from the Climatological Tables hereinafter, are shewn in inches (see the outer columns), and the corresponding metric scale (centimetres) is shewn in the two inner columns. The evaporation is not given for Hobart, Port Darwin, Daly Waters, and Alice Springs.

Interpretation of the Graphs.—The distance for any date from the zero line to the curve, represents the average number of inches, reckoned as per month, of rainfall at that date. Thus, taking the curves for Adelaide, on the 1st January the rain falls on the average at the rate of about four-fifths of an inch per month, or, say, at the rate of about 9½ inches per year. In the middle of June it falls at the rate of nearly 3 inches per month, or, say, at the rate of about 36 inches per year. At Dubbo the evaporation is at the rate of nearly 17 inches per month about the middle of January, and only about 1½ inches at the middle of June.

TABLE SHEWING MEAN ANNUAL RAINFALL AND EVAPORATION IN INCHES OF THE PLACES SHEWN ON PRECEDING PAGE, AND REPRESENTED BY THE GRAPHS.

—	Rainfall.	Evaporation.	—	Rainfall.	Evaporation.
Perth ...	33.44	65.87	Port Darwin ...	61.49	—
Adelaide ...	20.54	54.63	Daly Waters ...	26.81	—
Brisbane ...	48.06	85.37	Alice Springs...	10.89	97.44
Sydney ...	47.97	42.09	Dubbo ...	22.43	81.03
Melbourne ...	25.42	38.35	Laverton, W.A.	10.28	—
Hobart ...	23.36	—	Coolgardie ...	9.08	86.43

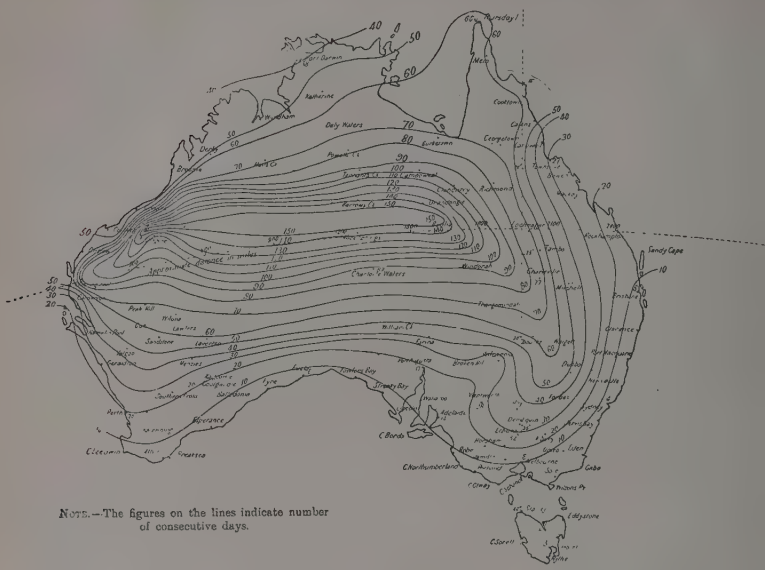
GRAPHS SHEWING ANNUAL FLUCTUATIONS OF MEAN BAROMETRIC PRESSURE FOR THE CAPITALS OF THE COMMONWEALTH OF AUSTRALIA.



Explanation of the Graphs of Barometric Pressure.—On the above graphs the lines representing the yearly fluctuation of barometric pressure at the capital cities are means for long periods, and are plotted from the Climatological Tables given hereinafter. The pressures are shewn in inches on about 2½ times the natural scale, and the corresponding pressures in centimetres are also shewn in the two inner columns, in which each division represents one millimetre.

Interpretation of the Barometric Graphs.—Taking the Brisbane graph for purposes of illustration, it will be seen that the mean pressure on 1st January is about 29.93 inches, and there are maxima in the middle of May and August of about 30.15 and 30.14 respectively. The double maxima appear clearly on each graph.

Chart indicating the area affected and period of duration of the Longest Heat Waves when the Maxim Temperature for consecutive 24 hours reached or exceeded 90° Fah.


Broome
Derby
Wyndham
Port Darwin
Daly Waters
Cloncurry
Croydon
Normanton
Burketown
Boulia
Charleville
Thursday Is.
Cooktown
Mackay
Rockhampton
Brisbane
Sandy Cape
Charlotte Waters
Oodnadatta
Hergott Springs
Farina
Beltana
Port Augusta
Adelaide
Eucla
Esperance
Albany
Geraldton
Carnarvon
Roebourne
Marble Bar
Nullagine
Meekatharra
Wiluna
Menzies
Coolgardie
Kalgoorlie
Norseman
Eucla
Esperance
Albany
Bunbury
Perth
Geraldton
Carnarvon
Roebourne
Port Hedland



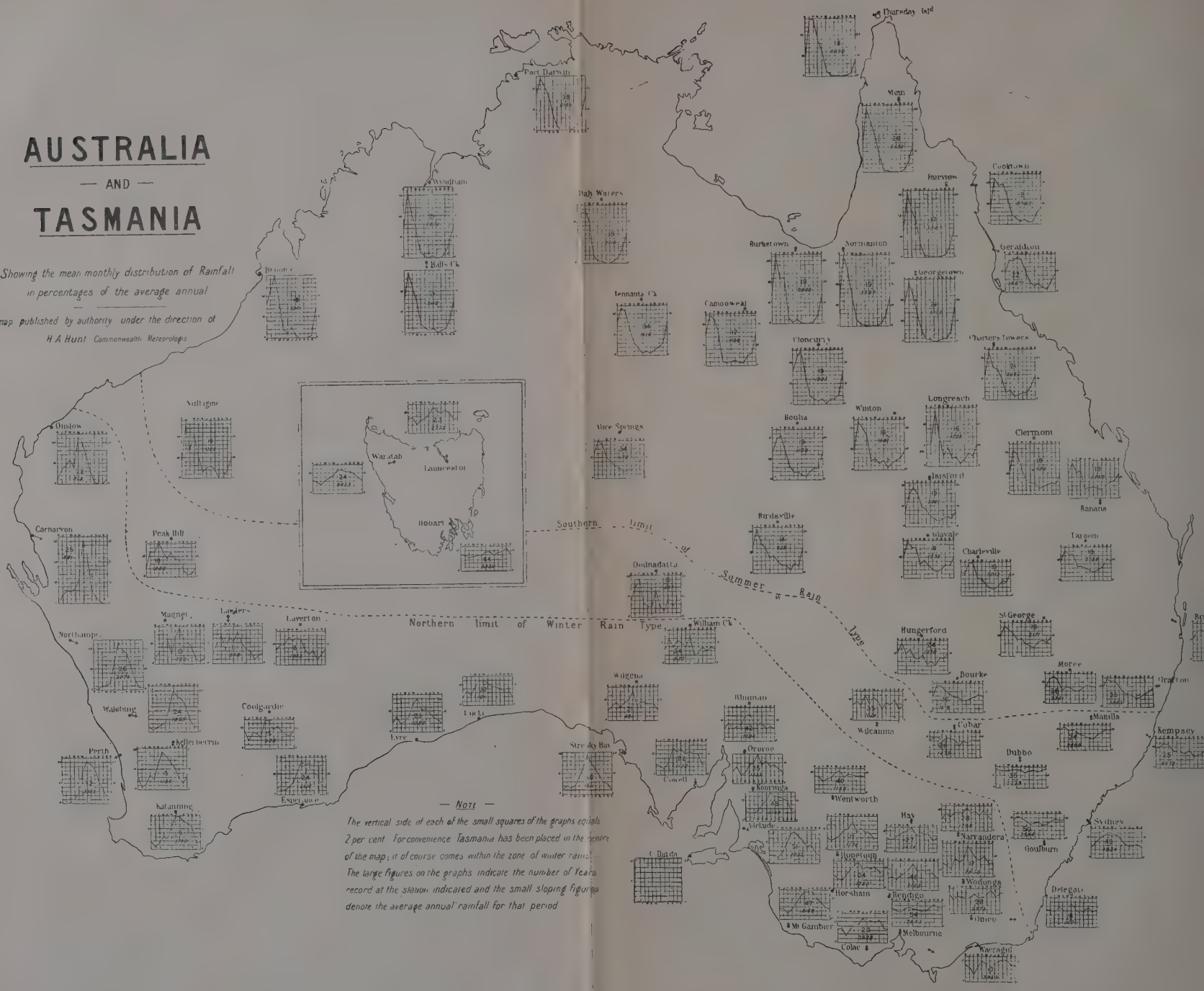
RAINFALL OF AUSTRALIA.

The above map has been prepared from a chart shewing the isohyets (curves of equal mean annual rainfall) for every 10 inches for Australia, and compiled from the most recent information.

AUSTRALIA
— AND —
TASMANIA

Showing the mean monthly distribution of Rainfall in percentages of the average annual

From map published by authority under the direction of H A Hunt Commonwealth Meteorologist



— NOTE —

The vertical side of each of the small squares of the graphs equals 2 per cent For convenience Tasmania has been placed in the centre of the map; it of course comes within the zone of winter rains. The large figures on the graphs indicate the number of Years record at the station indicated and the small sloping figures denote the average annual rainfall for that period

and the "Mistral," a violent northerly wind which blows from France to the Gulf of Lyons.

In North America, the "Northers" of Texas have similar characteristics, and in South America "The Pampero," a cold and strong southerly wind which blows over the Pampas of Argentina, is almost identical with the "Southerly Bursters." The "Tehuantepec" winds that blow on the Pacific side of Central America are also very similar.

All parts of Australia are subject during the summer months to hot, desiccating winds, of two kinds. The most common and general class are associated with low-pressure isobars. The more rare and local hot winds are caused by the heating of descending air on the lee-side of mountains. In Victoria the former class are known as "Brick Fielders," a name originally applied to the "Southerly Bursters" in Sydney, because of the dust they raised from the brickfields to the south of the city. When the goldfields were discovered in Victoria the miners hailing from Sydney gave the name to the dusty winds from the opposite quarter.

The hot winds on the south-eastern littoral are analogous to the "Chinook" winds which blow at the eastern foot of the Rocky Mountains; to the "Fœhn" winds of the Alpine Valleys; and to the "North-Westers" of the Canterbury Plains in the Middle Island of New Zealand.

18. **Influences affecting Australian Climate.**—Australian history does not cover a sufficient period, nor is the country sufficiently occupied, to ascertain whether or not the advance of settlement has materially affected the climate as a whole. Local changes therein, however, have taken place, a fact which suggests that settlement and the treatment of the land have a distinct effect on local conditions. For example, the mean temperature of Sydney shews a rise of two-tenths of a degree during the last twenty years, a change probably brought about by the great growth of residential and manufacturing buildings within the city and in the surrounding suburbs during that period. Again, low-lying lands on the north coast of New South Wales, that originally were seldom subject to frosts, have with the denudation of the surrounding hills from forests experienced annual visitations, the probable explanation being that, through the absence of trees, the cold air of the high lands now flows, unchecked and untempered, down the sides of the hills to the valleys and lower lands.

It is pointed out by Abercromby,[1] as shewing the influence of irrigation on climate, that "Before the Suez Canal was made, the desert through which it is cut was said to be rainless; now since the Bitter Lakes have been filled up with water, rain falls on an average eight days in the year at Ismailia." And in the United States, General A. W. Greely[2] says, concerning "Heat Waves," "It seems possible that the frequency and intensity of such visitations have diminished on the Pacific coast, since Tennant's record of hot days (classing as such those on which the temperature rose to 80° or above, at San Francisco) indicates that their annual number has very materially diminished since 1859. For seven years prior to 1859 such days averaged thirteen yearly, and since that time, up to 1871, the average yearly number is but four. The immense quantity of land placed under irrigation and the vast increase in vegetation are obvious reasons why there should be some diminution in this respect."

(i.) *Influences of Forests on Climate.* As already indicated, forests doubtless exercise a great influence on local climate, and hence, to the extent that forestal undertakings will allow, the weather can be controlled by human agency. The direct action of forests is an equalising one; thus, especially in equatorial regions and during the warmest portion of the year, they considerably reduce the mean temperature of the air. They also reduce the diurnal extremes of their shade temperatures, by altering the extent of radiating surface, by evaporation, and by checking the movement of air. While decreasing

1. "Seas and Skies," Hon. Ralph Abercromby. 8vo, London, 1888, p. 30.
2. "American Weather." 8vo, London, 1888, p. 253.

evaporation from the ground, they increase the relative humidity. Vegetation greatly diminishes the rate of flow-off of rain, and the washing away of surface soil. Thus, when a region is protected by trees, steadier water supply is ensured, and the rainfall is better conserved. In regions of snowfall the supply of water to rivers is similarly regulated, and without this and the sheltering influence of ravines and "gullies," watercourses supplied mainly by melting snow would be subject to alternate periods of flooding and dryness. This is borne out in the inland rivers. Thus, the River Murray, which has never been known to run dry, derives its steadiness of flow mainly through the causes above indicated.

(ii.) *Direct Influences of Forest on Rainfall.* Whether forests have a direct influence on rainfall is a debatable question, some authorities alleging that precipitation is undoubtedly induced by forests, while others contend the opposite. According to Dr. Hann, observations have been made in India and Germany which support the idea that the destruction of trees has had a most deteriorating effect upon the climate.[1] In the Cordilleras, clouds with rain falling from them can be seen hanging over forests, while over contiguous lands covered with shrubs or used for agriculture the sky is blue and the sun is shining.

In America the influence of forests on the rainfall is still debated, but in Europe authorities contend that forests encourage frequent rainfalls. Hann states that a surface which keeps the air moist and cool, and from which there is as great an evaporation as takes place from extended forests, must have a tendency to increase the amount and frequency of precipitation, as contrasted with an open country which is dry, but over which conditions are otherwise similar.

Obviously the settlement of this very important question is difficult. Observations would have to be taken, with different treatments of the land, over very extended periods. Sufficient evidence exists, however, to establish that, even if the rainfall has not increased, the beneficial effect of forest lands in tempering the effects of the climate is more than sufficient to disclose the importance of their protection and extension. Curtis, in a paper read before the Meteorological Congress in 1893, sets forth important evidence of the ill-effects on orchard and wheat country of the felling of trees for the timber trade.

In Michigan, where half a century ago peach trees flourished and were rarely injured by cold, the crops have now nearly disappeared, owing to the removal by timbermen of the shelter afforded by the forests. In Northern Kansas, too, from the same cause, the growing of peaches has been largely abandoned. Many of the South Californian citrus fruit-growers protect their orchards from the destructive effects of wind by the judicious planting of eucalyptus and other trees.

It is the rapid rate of evaporation (says Dr. Fernow), induced by both hot and cold winds, which injures crops and makes life uncomfortable on the plains. Whether the forest aids in increasing precipitation there may be doubt, but nobody can say that it does not check the winds and the rapid evaporation due to them.

Trees as wind-breaks have been successfully planted in central parts of the United States, and there is no reason why similar experiments should not be successful in many parts of our treeless interior. The belts should be planted at right angles to the direction of the prevailing parching winds, and if not more than half a mile apart will afford shelter to the enclosed areas.[2]

19. **Comparison of Rainfalls and Temperatures.**—For the purpose of comparison the following lists of rainfalls and temperatures are given for various important cities throughout the world, for the site of the federal capital, and for the capitals of the Australian States :—

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1. "Climatology," p. 194.

2. See A. Woeikof, Petermann's Mittheilungen, 1885; and W. M. Fulton and A N. Salisbury, "Convention of U.S.A. Weather Bureau Officials, 1898."

COMPARISON OF RAINFALLS AND TEMPERATURES OF CITIES OF THE WORLD WITH THOSE OF AUSTRALIA.

Place.	Height above M.S.L.	Annual Rainfall.			Temperature.					
		Average.	Highest.	Lowest.	*Mean Summer.	†Mean Winter.	Highest on Record.	Lowest on Record.	Average Hottest Month.	Average Coldest Month.
	Ft.	Ins.	Ins.	Ins.	Fahr.	Fahr.	Fahr.	Fahr.	Fahr.	Fahr
Amsterdam ...	...	26.40	...	...	62.9	37.1	93.9	5.8	63.6	35.0
Athens	...	...	...	...	...	...	106.0	...	...	...
Berlin	115	22.88	30.04	14.25	64.7	32.2	98.6	—13.0	66.0	30.0
Berne	1,880	46.00	...	...	...	...	97.2	—22.0	63.0	27.0
Bombay	37	73.99	...	...	83.0	75.2	98.5	55.9	84.6	74.5
Brussels	177	28.66	41.27	17.77	...	...	...	...	...	...
Budapest... ...	512	24.80	35.27	12.91	...	...	...	...	...	...
Buenos Ayres ...	72	36.82	80.73	21.53	73.2	51.5	103.1	25.9	74.2	50.5
Calcutta	18	63.30	...	...	85.1	66.9	108.2	44.2	85.7	65.2
Capetown ...	40	25.50	36.72	17.71	68.1	54.7	102.0	34.0	68.8	53.9
Chicago	836	33.28	45.80	24.40	70.0	26.1	103.0	23.0	72.4	23.7
Christiania ...	82	22.51	...	...	61.0	24.5	93.0	—21.1	62.6	23.9
Colombo	42	88.27	...	...	81.4	79.2	100.0	64.0	82.1	79.0
Constantinople ...	...	28.75	42.74	14.78	74.0	43.5	103.6	13.0	75.7	42 0
Copenhagen ...	43	22.06	28.78	14.02	60.5	31.9	90.5	— 9.7	61.9	31.4
Dublin	47	27.86	35.57	20.47	58.9	42.0	87.2	13.3	63.5	32.8
Edinburgh ...	230	26.50	38.94	17.60	59.0	38.4	88.0	0.0	58.0	37.0
Genoa	157	51.29	108.22	28.21	...	...	...	...	...	...
Hong Kong ...	110	84.43	119.71	45.83	81.3	60.3	88.8	50.5	81.8	58.0
Johannesburg ...	5,925	30.64	43.39	21.66	65.0	51.5	94.0	28.3	66.8	40.6
Lisbon	312	29.18	52.79	17.32	69.6	51.3	94.1	32.5	...	...
London	159	24.12	35.54	16.38	61.3	39.3	97.1	4.0	62.7	38.6
Madras	22	49.02	88.66	18.45	87.6	75.9	112.4	57.3	88.7	75.3
Madrid	2,149	16.23	27.48	9.13	73.0	41.2	107.1	10.5	75.7	39.7
Marseilles ...	246	21.15	43.04	10.56	70.4	45.4	100.4	11.5	72.2	44.3
Moscow	587	21.50	29.56	13.74	63.5	...	...	...	68.0	12.0
Naples	489	33.60	50.43	16.02	76.1	49.3	104.0	23.0	77.2	48.2
New York ...	146	44.63	37.60	24.30	71.4	31.8	97.0	—28.0	73.5	30.2
Ottawa	294	33.19	38.05	25.25	66.7	15.0	98.3	—31.6	68.7	12.6
Paris	165	21.92	29.56	16.44	63.5	37.1	101.1	...	...	...
Pekin	...	24.40	...	...	...	...	...	...	79.2	23.6
Quebec	296	...	...	...	68.0	14.0	...	...	66.0	9.4
Rome	164	33.58	57.95	20.71	74.0	46.6	100.4	19.6	76.5	45.7
San Francisco ...	189	22.77	38.82	9.31	58.6	50.6	100.0	29.0	61.0	50.0
Shanghai ...	...	...	...	...	77.4	39.4	79.7	37.4	82.7	37.7
Singapore ...	12	92.70	123.24	65.56	...	...	93.0	...	...	...
Stockholm ...	144	17.92	25.46	11.78	59.6	37.1	91.8	—22.0	63.0	24.5
St. Petersburg ...	33	19.86	29.33	12.13	61.0	19.0	87.4	—30.3	64.0	17.1
Tokyo	69	58.00	...	...	74.1	38.6	98.0	15.0	77.4	36.6
Vienna	663	24.50	33.90	16.50	65.7	30.4	97.7	— 8.0	67.1	28.0
Vladivostock ...	100	12.60	...	...	...	...	...	...	69.5	5.0
Washington ...	132	43.50	61.30	30.60	74.7	34.5	104.0	—15.0	77.0	33.0

FEDERAL CAPITAL SITE.

Canberra (Dist.) Queanbeyan ...	2,000 to 2,900	22.63	40.29	10.42	* 67.5	† 41.8	104.0	11.1	68.4	39.7

THE STATE CAPITALS.

					*	†				
Perth	197	33.44	46.73	20.48	72.7	55.7	107.9	35.3	73.8	55.0
Adelaide	140	20.54	30.87	13.43	73.1	52.9	116.3	32.0	74.2	51.5
Brisbane ...	137	48.06	88.26	16.17	76.6	59.4	108.9	36.1	77.2	58.0
Sydney	146	47.97	82.81	23.01	70.9	53.8	108.5	35.9	71.6	52 2
Melbourne ...	91	25.42	36.42	15.61	66.4	49.9	111.2	27.0	67.4	48.5
Hobart	160	23.36	40.67	13.43	61.3	46.9	105.2	27.7	62.0	45.7

* Mean of the three hottest months. † Mean of the three coldest months.

20. **Climatological Tables.**—The means, averages, extremes, totals, etc., for a number of climatological elements have been determined from long series of observations at the Australian capitals. These are given in the following tables:—

CLIMATOLOGICAL DATA FOR PERTH, W.A.

LAT. 31° 57′ S., LONG. 115° 51′ E. HEIGHT ABOVE M.S.L. 197 FT.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

Month.	Bar. corrected to 32° F. Mn. Sea Level and Standard Gravity from 9 a.m. and 3 p.m. Readings	Wind. Greatest Number of Miles in one day.	Wind. Mean Hourly Pressure. (lbs.)	Wind. Total Miles.	Wind. Prevailing Direction.	Mean Amount of Evaporation.	No. of Days Lightning.	Mean Amount of Clouds. 9 a.m. & 3 p.m.	No. of Clear Days.
No. of yrs. over which observation extends	25	12	12	12	12	11	12	13	13
January	29.912	797 27/98	0.73	11,627	S	10.35	1.2	2.6	16.3
February	29.926	650 6/08	0.68	10 086	S S E	8.71	1 3	2.7	14.0
March	29.992	601 17/99	0.56	10.164	S S E	7.60	0.9	3.2	14.2
April	30.074	955 25/00	0.45	8,795	S E	4.74	0.7	4.4	8.9
May	30.080	698 5/05	0.37	8,219	E N E	2.63	2.3	5.3	6.7
June	30.061	836 21/00	0.40	8.308	N N E	1.64	2.0	5.9	4.4
July	30.108	919 11/99	0.39	8,468	N N E	1.64	2.2	5.3	7.0
August	30.086	966 15 03	0.44	8,988	S W	2.32	1.7	5.2	6.8
September	30.059	864 11 05	0.48	9,065	S W	3.20	1.8	5.4	7.0
October	30.028	6?6 15 98	0.57	10,264	S S W	5.23	1.2	5.4	6.6
November	29.998	719 7/05	0.63	10.436	S	7.69	0.8	3.8	9.7
December	29.933	672 31/98	0.69	11,342	S	10.02	1.4	2.9	14.3
Year Totals	—	—	—	—	—	65.87	17.6	—	115.9
Year Averages	30.021	—	0.53	9,647	S	—	—	4.3	—
Year Extremes	—	966 15/8/03	—	—	—	—	—	—	—

TEMPERATURE.

Month.	Mean Temperature. Mean Max.	Mean Min.	Mean	Extreme Shade Temperature. Highest.	Lowest.	Greatest Range.	Extreme Temperature. Highest in Sun.	Lowest on Grass.	Sea water mn. 3 ft. below surface.
No. of yrs. over which observation extends	13	13	13	13	13	13	12	11	—
January	84.2	62.9	73.6	107.0 16/97	50.6 25/01	56.4	171.1 4/04	42.4 25/02	—
February	84.6	63.1	73.8	106.8 6/98	47.7 1/02	59.1	169.0 4/99	41.2 1/02	—
March	81.4	60.6	71.0	104.3 6, 7/06	45.8 8/03	58.5	161.6 †	36.7 8/03	—
April	75.7	56.6	66.2	98.0 5 06	42.4 2/01	55.6	152.0 11/01	35.0 2/01	—
May	68.7	52.5	60.6	90.4 2/07	39.9 *	50.5	138.8 15/02	31.9 18/99	—
June	63.6	49.0	56.3	77.1 9/09	36.9 14/98	40.2	131.0 5/04	30.2 14/98	—
July	62.7	47.3	55.0	73.8 24/99	36.4 19/06	37.4	131.0 31/98	2 .2 29/08	—
August	63.9	48.1	56.0	80.4 30/02	35.3 31/08	45.1	134.1 ‡	29.9 31/08	—
September	65.8	50.1	57.9	86.4 28/00	39.0 18/00	47.4	144.8 19/02	33.2 15/99	—
October	69.1	53.0	61.0	93.4 17/06	41.2 10/03	52.2	152.6 30/01	34.6 6/08	—
November	74.7	56.1	65.6	100.9 27/01	42.0 1/04	58.9	161.5 17/03	36.6 3/07	—
December	81?2	60.7	70.9	107.9 20/04	48.5 16/07	59.4	168.3 20/04	40.9 21/08	—
Year Averages	73.0	55.0	64.0	—	—	—	—	—	—
Year Extremes	—	—	—	107.9 20/12/04	35.3 31/8/08	72.6	171.1 4/1/04	29.2 20/7/08	—

* 17 and 18, 1899. † 1/99 and 1/09. ‡ 29/1898 and 18/1902.

HUMIDITY, RAINFALL, AND DEW.

Month.	Humidity. Mean 9 a.m.	Highest Mean.	Lowest Mean.	Rainfall. Mean Monthly.	Mean No. of Days Rain.	Greatest Monthly.	Least Monthly.	Greatest in One Day.	Dew. Mean Amount of Dew.	Mean No. days Dew
No. of yrs. over which observation extends	13	13	13	34	34	34	34	34	—	13
January	52	56	45	0.33	2	2.17 1879	nil *	1.74 28/79	—	2.0
February	53	63	48	0.33	2	2.30 1883	nil †	0.90 10/83	—	1.9
March	55	62	48	0.76	4	4.50 1896	nil ‡	1.53 17/76	—	3.4
April	64	70	54	1.66	7	4.97 1882	0.05 ‖	2.62 30/04	—	8.0
May	73	81	63	4.97	14	12.13 1879	0.98 1903	2.80 20/79	—	11.6
June	78	83	74	6.67	16	12.11 1890	2.16 1877	2.65 16/00	—	11.6
July	78	81	72	6.24	16	10.90 1902	2.42 1876	3.00 4/91	—	12.5
August	75	79	68	5.73	17	10.33 1882	0.46 1902	2.79 7/03	—	10.2
September	69	76	64	3.32	14	7.72 1903	0.69 1877	1.73 23/09	—	7.8
October	64	67	56	2.08	12	7.87 1890	0.49 1892	1.26 3/99	—	4.5
November	56	61	52	0.78	6	2.12 1880	nil 1891	1.11 30/03	—	3.7
December	51	56	46	0.57	4	3.05 1888	nil 1886	1.72 1/88	—	2.8
Year Totals	—	—	—	33.44	114	—	—	—	—	79.6
Year Averages	63	—	—	—	—	—	—	—	—	—
Year Extremes	—	83	45	—	—	12.13 5/79	nil §	3.00 4/7/91	—	—

* 1888, 1894, and 1897. † 1885, 1891, 1896, and 1903. ‡ 1877, 1884, and 1886. ‖ 1890, and 1894.
§ January, February, March, November, and December, various years.

CLIMATOLOGICAL DATA FOR ADELAIDE, S.A.

LAT. 34° 56′ S., LONG. 138° 35′ E. HEIGHT ABOVE M.S.L. 140 FT.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

Month.	Bar. corrected to 32° F. Min. Sea Level and Standard Gravity from 9 a.m. and 3 p.m. Readings	Wind. Greatest Number of Miles in one day.	Wind. Mean Hourly Pressure. (lbs.)	Wind. Total Miles.	Wind. Prevailing Direction.	Mean Amount of Evaporation.	No. of Days Lightning.	Mean Amount of Clouds. 9 a.m. & 3 p.m.	No. of Clear Days.
No. of yrs. over which observation extends	53	32	32	32	32	40	38	42	28
January	29.914	758 19 99	0.37	8,232	S W & S	8.99	2.3	3.5	7.6
February	29.952	691 22/96	0.31	7,007	S W & S	7.36	2 0	3.4	7.1
March	30.039	592 12/85	0.26	6,908	S W to S E	5.83	2.2	4.0	6.6
April	30.116	773 10 96	0.24	6.389	S W & S†	3.41	1.7	5.0	3.7
May	30.124	760 9/80	0.21	6,282	N E to N	2.00	1.8	5.7	1.7
June	30.097	750 12/78	0.27	6,779	N E to N	1.23	2.1	6.2	1.2
July	30.137	674 25/82	0.25	6,818	N E to N	1.30	1.5	5.8	1.3
August	30.093	773 31 97	0.29	7,351	N E to N‡	1.85	2.2	5.7	1.9
September	30.041	720 2/87	0.33	7,513	N E & S W‖	2.85	2.4	5.2	2.6
October	29.994	768 28/98	0.36	8,202	S W & N E‖	4.77	3.5	4.9	3.7
November	29 974	677 2/04	0.36	7,848	W S W to S	6.58	3.9	4.5	5.5
December	29.922	675 12/91	0.36	8.194	W S W to S	8.46	2.8	3.8	7.1
Year Totals	—	—	—	—	—	54.63	28.4	—	50.0
Year Averages	30.034	—	0.30	7,294	S W	—	—	4.8	—
Year Extremes	—	773 *	—	—	—	—	—	—	—

* 1/04/96; 31/8/97. † With tendency N E. ‡ With tendency S W. ‖ Equal.

TEMPERATURE.

Month.	Mean Temperature. Mean Max.	Mean Min.	Mean	Extreme Shade Temperature. Highest.	Lowest.	Greatest Range.	Extreme Temperature. Highest in Sun.	Lowest on Grass.	*Sea water min. 3 ft. below surface.
No. of yrs. over which observation extends	53	53	53	53	53	53	32	49	36
January	86.6	61.7	74.2	116.3 26/58	45.1 21/84	71.2	180.0 18/82	36.5 14/79	70.9
February	86.1	61.9	73.9	113.6 12/99	46.4 13/05	67.2	170.5 10/00	36.7 24/78	70.8
March	80.9	58.9	69.9	108.0 12/61	44.8 —/57	63.2	174.0 17/83	33.8 27/80	68 2
April	73.3	54.7	64.0	98.0 10/66	39.6 15/59	58.4	155.0 1/83	30.3 27/08	64.0
May	65.3	50.0	57.7	88.3 5/66	36.9 †	51.4	148.2 12/79	25.9 10/91	59.0
June	60.1	46.6	53.4	76.0 23/65	32.5 27/76	43.5	138.8 18/79	24.5 20/79	54 6
July	58.6	44.3	51.5	74.0 11/06	32.0 24/08	42.0	134.5 26/90	25.0 17/90	52 2
August	61.8	45.7	53.8	82.0 2/62	32.3 17/59	49.7	140.0 31/92	23.5 7/88	53.2
September	66.2	47.7	57.0	90.7 23/82	32.7 4/58	58.0	160.5 23/82	26.2 15/08	56.4
October	72.5	51.3	61.9	100.5 30/59	36.0 —/57	64.5	158.8 19/82	28.5 7/96	60.7
November	78.8	55.3	67.1	113.5 21/65	40.8 2/09	72.7	166.9 20/78	31.5 2/09	65.3
December	83.6	58.9	71.2	114.2 14/76	43.0 ‡	71.2	175.7 7/99	32 5 4·84	68.7
Year Averages	72.9	53.1	63.0	—	—	—	—	—	62.0
Year Extremes	—	—	—	116.3 26/1/58	32.0 24/7/08	84.3	180.0 18/1/82	23.5 7/8/88	—

* Taken at Lighthouse at entrance to Port River. † 26/1895; 24/1904. ‡ 16/1861; 4/1906.

HUMIDITY, RAINFALL, AND DEW.

Month.	Humidity. Mean 9 a.m.	Highest Mean.	Lowest Mean.	Rainfall. Mean Monthly.	Mean No. of Days Rain.	Greatest Monthly.	Least Monthly.	Greatest in One Day.	Dew. Mean Amount of Dew.	Mean No. days Dew
No. of yrs. over which observation extends	42	42	42	53	53	53	53	53	—	38
January	42	59	33	0.83	5	3.28 1870	nil *	2.30 2/89	—	3
February	44	56	37	0.58	3	3.10 1858	nil †	1.81 5/90	—	5
March	49	58	40	1.09	7	4.60 1878	nil ‡	3.50 5/78	—	10
April	59	72	44	1.86	9	5.65 1889	0.09 1888	3.15 5/60	—	13
May	70	76	58	2.79	14	7.75 1875	0.20 1891	2.47 5/75	—	15
June	78	84	70	3.01	17	6.02 1887	0.42 1886	1.45 25/84	—	15
July	78	87	72	2.56	17	5.38 1865	0.36 1899	1.75 10/65	—	17
August	72	77	65	2.39	17	5.59 1909	0.68 1860	1.44 31/03	—	16
September	63	72	54	1.76	14	3.67 1877	0.45 1896	1.42 25/93	—	15
October	54	67	44	1.79	12	3.83 1870	0.31 1888	2.24 16/08	—	11
November	48	57	38	1.05	7	2.76 1909	0.04 1885	1.88 28/58	—	6
December	43	50	33	0.83	6	3.98 1861	nil 1904	1.32 2/61	—	4
Year Totals	—	—	—	20.54	128	—	—	—	—	130
Year Averages	56	—	—	—	—	—	—	—	—	—
Year Extremes	—	87	33	—	—	7.75 5/75	nil §	3.50 5/3/78	—	—

* 1878, 1906. † 1860, etc. ‡ 1859, etc. § January, February, March, and December, various years.

CLIMATOLOGICAL DATA FOR BRISBANE, QUEENSLAND.

LAT. 27° 28′ S., LONG. 153° 2′ E. HEIGHT ABOVE M.S.L. 137 FT.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

Month.	Bar. corrected to 32° F. Mn. Sea Level and Standard Gravity from 9a.m. and 3p.m. Readings	Wind. Greatest Number of Miles in one day.	Wind. Mean Hourly Pressure. (lbs.)	Wind. Total Miles.	Wind. Prevailing Direction.	Mean Amount of Evaporation.	No. of Days Lightning.	Mean Amount of Clouds. 9a.m. & 3p.m.	No. of Clear Days.
No. of yrs. over which observation extends	23	—	—	—	23	8	—	23	—
January	29.871	—	—	—	E	9.16	—	6.2	—
February	29 889	—	—	—	S E	7.72	—	6.2	—
March	29.955	—	—	—	S	7.12	—	6.0	—
April	30 046	—	—	—	S	6.43	—	5.2	—
May	30 095	—	—	—	S	5.50	—	4.9	—
June	30 055	—	—	—	S & W	5.15	—	4.2	—
July	30.066	—	—	—	S & W	5.77	—	3.8	—
August	30.081	—	—	—	S & S W	6.35	—	3.9	—
September	30 024	—	—	—	S	7.39	—	3.9	—
October	29 994	—	—	—	N & N E	8.09	—	4.5	—
November	29.960	—	—	—	N E & E	8.11	—	5.2	—
December	29.893	—	—	—	N E & E	8.58	—	5.7	—
Year Totals ...	—	—	—	—	—	85.37	—	—	—
Year Averages ...	29.994	—	—	—	S'ly to E'ly	—	—	5.0	—
Year Extremes ...	—	—	—	—	—	—	—	—	—

TEMPERATURE.

Month.	Mean Temperature. Mean Max.	Mean Temperature. Mean Min.	Mean Temperature. Mean	Extreme Shade Temperature. Highest.	Extreme Shade Temperature. Lowest.	Greatest Range.	Extreme Temperature. Highest in Sun.	Extreme Temperature. Lowest on Grass.	Sea water mn. 3 ft. below surface
No. of yrs. over which observation extends	23	23	23	23	23	23	23	23	—
January	85.4	68.9	77.2	108.9 14/02	58.8 4/93	50.1	162.7 20/89	49.9 4/93	—
February	84.4	68.6	76.5	101.9 11/04	58.7 *	43.2	162.7 3/08	49.3 9/89	—
March	82.2	66.5	74.4	96.8 16/88	55.6 30/95	41.2	160.0 1/87	46.0 28/02	—
April	78.7	61.5	70.1	95.2 †	48.6 17/00	46.6	150.1 1/08	37.0 17/00	—
May	73.3	55.3	64.3	88.8 18/97	41.3 24/99	47.5	140.8 4/88	29.8 8/97	—
June	69.1	50.5	59.8	81.5 6/06	36.3 29/08	45.2	133.9 6/06	25.4 23/88	—
July	68.1	47.8	58.0	83.4 28/98	36.1 ‡	47.3	131.4 29/89	23.9 11/90	—
August	71.1	49.8	60.5	87.5 28/07	37.4 6/87	50.1	140.7 30/88	27.1 9/99	—
September	75.5	54.6	65.1	90.2 20/04	40.7 1/96	49.5	155.5 26/03	30.4 1/89	—
October	79.9	59.8	69.9	101.4 18/93	43.3 3/99	58.1	156.5 31/89	34.9 8/89	—
November	82.7	63.9	73.3	105.4 13/98	48.5 2/05	56.9	162.3 7/89	38.8 1/05	—
December	85.1	67.3	76.2	105.9 26/93	57.0 16/90	48.9	159.5 23/89	49.1 3/94	—
Year Averages ...	78.0	59.5	68.8	—	—	—	—	—	—
Year Extremes ...	—	—	—	108.9 14/1/02	36.1 ‖	72.8	162.7 ¶	23.9 11/7/90	—

* 10-11/04 † 9/96 and 5/03. ‡ 12/94 and 2/96. ‖ 12/7/94 and 2/7/96. ¶ 20/1/89 and 3/2/08.

HUMIDITY, RAINFALL, AND DEW.

Month.	Humidity. Mean 9 a.m.	Humidity. Highest Mean.	Humidity. Lowest Mean	Rainfall. Mean Monthly.	Rainfall. Mean No. of Days Rain.	Rainfall. Greatest Monthly.	Rainfall. Least Monthly.	Rainfall. Greatest in One Day.	Dew. Mean Amount of Dew.	Dew. Mean No. days Dew
No of yrs over which observation extends	23	23	23	50	50	50	50	50	—	—
January	65	79	53	6.57	14	27.72 1895	1.23 1889	18.31 21/87	—	—
February	69	82	55	7.05	14	40.39 1893	0.77 1904	8.36 16/93	—	—
March	72	85	56	6.50	16	21.36 1890	0 63 1903	11.18 14/08	—	—
April	72	79	60	3.98	13	14.26 1892	0.05 1897	3 93 20/92	—	—
May	75	85	64	3.05	10	11.82 1903	0.47 1902	4.26 31/03	—	—
June	74	81	68	2.72	8	11.03 1893	0.02 1895	6.01 9/93	—	—
July	73	80	67	2.39	8	8.46 1889	0 04 1894	3.54 16/89	—	—
August	71	80	65	2.48	7	11.80 1887	0.24 1896	4.89 12/87	—	—
September	65	76	47	2.02	8	4.80 1890	0.10 1907	2.46 2/94	—	—
October	61	72	52	2.80	10	6.26 1892	0.14 1900	1.95 20/89	—	—
November	59	71	53	3.65	10	8.78 1889	1.07 1906	2.57 17/95	—	—
December	61	67	52	4.84	12	11.52 1895	0.55 1900	5.26 7/05	—	—
Year Totals ...	—	—	—	48.05	130	—	—	—	—	—
Year Averages ...	68	—	—	—	—	—	—	—	—	—
Year Extremes ...	—	85	47	—	—	40.39 2/1893	0.02 6/1895	19.31 21/1/87	—	—

— signifies no record kept.

CLIMATOLOGICAL DATA FOR SYDNEY, N.S.W.

LAT. 33° 52′ S., LONG. 151° 12′ E. HEIGHT ABOVE M.S.L. 146 FT.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

Month.	Bar. corrected to 32° F. Mean Sea Level and Standard Gravity from 24 hrly Readings.	Wind. Greatest Number of Miles in one day.	Wind. Mean Hourly Pressure. (lbs.)	Wind. Total Miles.	Wind. Prevailing Direction.	Mean Amount of Evaporation.	No. of Days Lightning.	Mean Amount of Clouds.	No. of Clear Days.
No. of yrs. over which observation extends	51	43	43	43	51	50	46	48	46
January	29.904	721 1/71	0.38	8,322	N E	5.73	4.8	5.9	1.9
February	29 947	871 12/69	0.35	7,233	N E	4.35	4.0	6.2	1.2
March	30 022	943 20/70	0.26	6,904	N E	3.76	4.1	5.7	1.7
April	30 078	803 6/82	0.24	6,369	N E	2.62	4.2	5.1	2.5
May	30 067	758 6/98	0.23	6,489	W	1.81	3.7	4.9	3.2
June	30 063	712 7/00	0.31	7,272	W	1.43	2.4	4.8	3.4
July	30.084	930 17/79	0.29	7,378	W	1.56	2.6	4.3	4.2
August	30.075	756 22/72	0.28	7,152	W	2.09	3.5	4.1	4.6
September	30 013	964 6/74	0.32	7,382	W	3.08	4.2	4.4	3.5
October	29.971	926 4/72	0.35	8,000	N E	4.39	5.1	5.0	2.2
November	29.954	720 13/68	0.36	7,845	N E	5.21	5.6	5.6	1.5
December	29.890	938 3/84	0.36	8,204	N E	6.06	5.6	5.6	1.8
Year Totals	—	—	—	—	—	42.09	49.8	—	31.7
Year Averages	30.006	—	0.31	7,379	N E	—	—	5.1	—
Year Extremes	—	964 6/9/74	—	—	—	—	—	—	—

TEMPERATURE.

Month.	Mean Temperature. Mean Max.	Mean Min.	Mean	Extreme Shade Temperature. Highest.	Lowest.	Greatest Range.	Extreme Temperature. Highest in Sun.	Lowest on Grass.	Sea water min. 3 ft. below surface*
No. of yrs. over which observation extends	51	51	51	51	51	51	51	51	49
January	78.3	64.9	71.6	108.5 13/96	51.2 14/65	57.3	160.9 13/96	44.2 18/97	71.4
February	77.2	64.8	71.0	101.0 19/66	49.3 28/63	51.7	162.1 15/98	43.4 25/91	71.9
March	75.4	63.0	69.3	102.6 3/69	48.8 14/86	53.8	172.3 4/89	42.3 13/93	71.0
April	70.9	58.2	64.6	89.0 4.09	44.6 27/64	44.4	144.1 10/77	38.0 13/92	68.3
May	64.9	52.0	58.5	83.5 1/59	40.2 22/59	43.3	129.7 1/96	30.9 7/88	64.2
June	60.4	48.2	54.3	74.7 24/72	38.1 29/62	36.6	123.0 14/78	28.7 30/95	59.9
July	58.9	45.6	52.3	74.9 17/71	35.9 12/90	39.0	141.3 15/98	24.0 4/93	57.2
August	62.2	47.5	54.8	82.0 31/84	36.8 3/72	45.2	149.0 30/78	27.7 30/95	57.5
September	66.3	51.3	58.8	91.1 24/07	40.8 18/64	50.3	142.2 12/78	30.1 17/05	60.2
October	71.1	55.8	63.5	99.7 19/98	43.3 2/99	56.4	149.9 13/96	32.7 9/05	63.3
November	74.3	59.6	66.9	102.7 21/78	45.8 1/05	56.5	158.5 28/99	38.8 1/05	66.9
December	77.2	62.8	70.0	107.5 31/04	49.3 2/59	58.2	171.5 4/88	42.2 8/75	69.6
Year Averages	69.8	56.2	63.0	—	—	—	—	—	65.1
Year Extremes	—	—	—	108.5 13/1/96	35.9 12/7/90	72.6	172.3 4/3/89	24.0 4/7/93	—

* Taken at Fort Denison.

HUMIDITY, RAINFALL, AND DEW.

Month.	Humidity. Mean	Highest Mean.	Lowest Mean	Rainfall. Mean Monthly.	Mean No. of Days Rain.	Greatest Monthly.	Least Monthly.	Greatest in One Day.	Dew. Mean Amount of Dew.	Mean No. days Dew
No. of yrs. over which observation extends	51	51	51	51	51	51	51	51	50	50
January	70	78	60	3.41	14.1	10.49 1883	0.42 1888	3.75 22/63	0.002	1.1
February	73	81	60	4.71	14.1	18.56 1873	0.34 1902	8.90 25/73	0.003	1.4
March	75	85	63	5.09	15.1	16.70 1870	0 42 1876	5.66 25/90	0.007	2.9
April	78	87	64	5.32	13.4	24.49 1861	0.06 1868	7.52 29/60	0.022	6.3
May	76	90	66	5.05	15.7	20.87 1889	0.21 1885	9.36 28/89	0.030	7.3
June	79	89	72	5.31	12.9	16.30 1885	0.19 1904	5.17 16/84	0.022	5.3
July	77	88	66	4.54	12.2	13.21 1900	0 12 1862	5.72 28/08	0.024	6.8
August	74	84	64	3.27	11.6	14.89 1889	0.04 1885	5.33 2/60	0.021	5.7
September	70	79	61	2.92	12.2	14.05 1879	0.08 1862	5.69 10/79	0.008	3.4
October	68	77	55	2.84	12.7	10.81 1902	0.21 1867	6.37 13/02	0.004	1.6
November	68	79	58	2.99	12.6	9.88 1865	0.20 1867	4.23 19/00	0.006	2.7
December	68	77	59	2.48	13.8	7.80 1870	0.45 1876	2.75 1/88	0.002	1.0
Year Totals	—	—	—	47.99	158.7	—	—	—	0.151	45.5
Year Averages	73	—	—	—	—	—	—	—	—	—
Year Extremes	—	90	55	—	—	24.49 4/1861	0.04 8/1885	8.90 25/2/73	—	—

CLIMATOLOGICAL DATA FOR MELBOURNE, VICTORIA.

LAT. 37° 50′ S., LONG. 144° 59′ E. HEIGHT ABOVE M.S.L. 91 FT.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

Month.	Bar. corrected to 32° F. Mn. Sea Level and Standard Gravity from 9 a.m., 3 p.m. and 9 p.m.	Wind. Greatest Number of Miles in one day.	Wind. Mean Hourly Pressure. (lbs.)	Wind. Total Miles.	Wind. Prevailing Direction.	Mean Amount of Evaporation.	No. of Days Lightning.	Mean Amount of Clouds.	No. of Clear Days.
No. of yrs. over which observation extends	52	43	43	43	43	38	—	52	—
January	29.911	583 10/97	0.29	7,345	S W, S E	6.31	—	5.1	—
February	29.962	566 8/68	0.28	6,441	S W, S E	4.98	—	5.1	—
March	30.038	677 9/81	0.22	6,398	S W, S E	3.84	—	5.5	—
April	30.100	597 7/68	0.19	5,719	S W, N W	2.31	—	5.9	—
May	30.105	693 12/65	0.19	5,958	N W, N E	1.48	—	6.5	—
June	30.076	761 13/76	0.24	6,461	N W, N E	1.10	—	6.7	—
July	30.100	755 8/74	0.23	6,482	N W, N E	1.06	—	6.3	—
August	30.065	637 14/75	0.26	6,882	N W, N E	1.47	—	6.3	—
September	29.998	617 11/72	0.29	7,108	N W, S W	2.26	—	6.1	—
October	29.943	599 5/66	0.29	7,377	S W, N W	3.27	—	6.0	—
November	29.953	734 13/66	0.29	7,083	S W, S E	4.50	—	5.9	—
December	29.900	655 1/75	0.30	7,503	S W, S E	5.77	—	5.5	—
Year Totals	—	—	—	—	—	38.35	—	—	—
Year Averages	30.013	—	0.26	6,730	S W, N W	—	—	5.9	—
Year Extremes	—	899 5/10/66	—	—	—	—	—	—	—

TEMPERATURE.

Month.	Mean Temperature. Mean Max.	Mean Temperature. Mean Min.	Mean Temperature. Mean	Extreme Shade Temperature. Highest.	Extreme Shade Temperature. Lowest.	Greatest Range.	Extreme Temperature. Highest in Sun.	Extreme Temperature. Lowest on Grass.	Sea water mn. 3 ft. below surface.
No. of yrs. over which observation extends	54	54	54	54	54	54	51	49	—
January	78.3	56.6	67.4	111.2 14/62	42.0 28/85	69.2	178.5 14/62	30.2 28/85	—
February	77.7	56.6	67.2	109.5 7/01	40.3 9/65	69.2	167.5 15/70	30.9 6/91	—
March	74.9	54.5	64.7	105.5 2/93	37.1 17/84	68.4	164.5 1/68	28.9 *	—
April	68.5	50.6	59.6	94.0 6/65	34.8 24/88	59.2	152.0 8/61	25.0 23/97	—
May	61.4	46.6	54.0	83.7 7/05	31.3 26/95	52.4	142.6 2/59	23.2 21/97	—
June	56.8	43.9	50.3	72.2 1/07	28.0 11/66	40.1	129.0 11/61	20.4 17/95	—
July	55.4	41.5	48.5	68.4 24/78	27.0 21/69	41.4	125.8 27/80	20.5 12/03	—
August	58.7	43.1	50.9	77.0 20/85	28.3 11/63	48.7	137.4 29/69	21.3 14/02	—
September	62.4	45.4	53.9	82.3 30/07	31.1 16/08	49.8	142.1 20/67	24.7 13/07	—
October	67.0	48.1	57.5	96.1 30/85	32.1 3/71	64.0	154.3 28/68	25.9 3/71	—
November	71.4	51.0	61.2	105.7 27/94	36.5 2/96	69.2	159.6 29/65	24.6 2/96	—
December	75.4	53.7	64.5	110.7 15/76	40.0 4/70	70.7	170.3 20/69	33.2 1/04	—
Year Averages	67.3	49.3	58.3	—	—	—	—	—	—
Year Extremes	—	—	—	111.2 14/1/62	27.0 21/7/69	84.2	178.5 14/1/62	20.4 17/6/95	—

* 17/1884 and 20/1897.

HUMIDITY, RAINFALL, AND DEW.

Month.	Humidity. Mean 9a.3p.9p.	Humidity. Highest Mean.	Humidity. Lowest Mean.	Rainfall. Mean Monthly.	Rainfall. Mean No. of Days Rain.	Rainfall. Greatest Monthly.	Rainfall. Least Monthly.	Rainfall. Greatest in One Day.	Dew. Mean Amount of Dew.	Dew. Mean No. days Dew
No. of yrs. over which observation extends	52	52	52	54	54	54	54	51	—	—
January	64	73	52	1.90	7	5.68 1904	0.04 1878	2.97 9/97	—	—
February	65	75	54	1.72	7	6.24 1904	0.03 1870	2.14 7/04	—	—
March	68	78	59	2.11	8	6.36 1874	0.18 1859	3.05 15/78	—	—
April	72	83	63	2.37	10	6.71 1901	0.33 1908	4.50 22/86	—	—
May	79	86	70	2.13	12	4.31 1862	0.45 1901	1.85 7/91	—	—
June	80	88	75	2.11	14	4.51 1859	0.73 1877	1.74 21/04	—	—
July	80	88	74	1.84	13	7.02 1891	0.57 1902	2.71 12/91	—	—
August	75	81	65	1.84	14	3.59 1909	0.48 1903	1.87 17/81	—	—
September	72	81	63	2.30	14	5.87 1870	0.52 1907	2.62 12/80	—	—
October	70	79	63	2.66	13	7.61 1869	0.57 1895	3.00 17/69	—	—
November	67	75	53	2.21	10	5.05 1881	0.25 1895	2.57 16/76	—	—
December	64	75	49	2.25	9	7.18 1863	0.11 1904	2.62 28/07	—	—
Year Totals	—	—	—	25.44	—	—	—	—	—	—
Year Averages	71	—	—	—	131	—	—	—	—	—
Year Extremes	—	88	49	—	—	7.61 10/1869	0.03 2/1870	4.50 22/4/86	—	—

— Signifies no record kept.

CLIMATOLOGICAL DATA FOR HOBART, TASMANIA.

LAT. 42° 53′ S., LONG. 147° 20′ E. HEIGHT ABOVE M.S.L. 160 FT.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

Month.	Bar. corrected to 32° F. Mn. Sea Level and Gravity from 9 a.m. Readings	Wind.				Mean Amount of Evaporation.	No. of Days Lightning.	Mean Amount of Clouds.	No. of Clear Days.
		Greatest Number of Miles in one day.	Mean Hourly Pressure. (lbs.)	Total Miles.	Prevailing Direction.				
No. of yrs. over which observation extends	15	—	25	—	25	—	—	26	—
January	29.840	—	0 51	—	S E, N W	—	—	6.7	—
February	29.939	—	0.51	—	N W, S E	—	—	5.4	—
March	29.956	—	0.47	—	N W, S E	—	—	5.2	—
April	29 975	—	0.43	—	N W, S E	—	—	6.5	—
May	30.044	—	0.47	—	N W	—	—	6.8	—
June	29 976	—	0.43	—	N W	—	—	6.6	—
July	29.955	—	0.47	—	N W	—	—	6.6	—
August	29 994	—	0.51	—	N W	—	—	6.0	—
September	29 867	—	0.63	—	N W, S E	—	—	5.2	—
October	29 833	—	0.63	—	N W, S E	—	—	5.2	—
November	29 833	—	0.63	—	N W, S E	—	—	5 9	—
December	29.806	—	0.60	—	N W, S E	—	—	5.9	—
Year Totals	—	—	—	—	—	—	—	—	—
Year Averages	29.915	—	0.51	—	N W, S E	—	—	6.0	—
Year Extremes	—	—	—	—	—	—	—	—	—

TEMPERATURE.

Month.	Mean Temperature.			Extreme Shade Temperature.				Greatest Range.	Extreme Temperature.				Sea water mn. 3 ft. below surface
	Mean Max.	Mean Min.	Mean	Highest.		Lowest.			Highest in Sun.		Lowest on Grass.		
No. of yrs over which observation extends	26	26	26	26		26		26	24		22*a*		—
January	70.9	53.1	62.0	105.0	1/00	40.3	2/06	64.7	160.0	‡	30.6	1897	—
February	71.1	52.9	62.0	104.4	12/99	39.0	20/87	65.4	165.0	24/98	28.3	1887	—
March	68.0	50.5	59.3	97.5	7/91	36.0	31/05	61.5	147.5	1/06	27.5	30/02	—
April	62.8	47.7	55.2	82.4	6/88	33.3	24/88	49.1	138.5	12/05	25.0	1886	—
May	57.6	43.5	50.6	75.3	3/88	29.2	20/02	46.1	128.0	1889	20.0	19/02	—
June	52.9	41.4	47.2	69.2	1/07	29.5	26/02	39.7	122.0	12/94	21.0	6/87	—
July	52.1	39.4	45.8	65.4	15/98	27.7	11/95	37.7	118.7	19/96	18.7	16/86	—
August	55.0	41.0	48.0	71.5	17/02	30.5	4/97	41.0	129.0	1887	20.1	1900	—
September	58.5	42.8	50.7	79.5	*	31.0	16/97	48.5	134.0	7/94	22.7	1886	—
October	62 6	45.3	54.0	86.0	29/07	32 0	12/89	54.0	146.0	1885	23.8	§	—
November	66.3	48.1	57.2	98.0	23/88	27.0	†	61.0	151.8	7/09	26.0	1/08	—
December	69.1	50.8	60.0	105.2	30/97	38.0	3/06	67.2	156.0	18/05	27.2	1886	—
Year Averages	62.2	46.3	54.3	—		—		—	—		—		—
Year Extremes	—	—	—	105.2	30/12/97	27.7	11/7/95	77.5	165.0	24/2/98	18.7	16/7/86	—

a Records only continuous since 1893.

* 30/91 and 17/97. † 24/84, 13/87, 11/85, and 7/00. ‡ 5/86 and 13/05. § 1886 and 1899.

HUMIDITY, RAINFALL, AND DEW.

Month.	Humidity.			Rainfall.							Dew.	
	Mean 9 a.m.	Highest Mean.	Lowest Mean	Mean Monthly.	Mean No. of Days Rain.	Greatest Monthly.		Least Monthly.		Greatest in One Day.		Mean Amount of Dew.	Mean No. days Dew
No of yrs over which observation extends	15	15	15	65	52	65		65		27		—	—
January	63	72	55	1 85	9	5.91	1893	0.03	1841	2.59	30/05	—	—
February	64	76	51	1.50	8	9.15	1854	0.07	1847	1.60	22/03	—	—
March	68	76	62	1 62	9	7.60	1854	0.02	1843	1.45	1/83	—	—
April	74	84	65	1 80	10	6.50	1909	0.07	1904	5.02	20/09	—	—
May	78	85	68	1.81	12	6.37	1905	0.10	1843	1.62	31/05	—	—
June	82	92	75	2.19	13	8.15	1889	0.22	1852	4.11	14/89	—	—
July	80	88	73	2.13	13	5.98	1849	0 30	1850	1.56	8/94	—	—
August	79	82	71	1.81	12	10.16	1858	0.23	1854	2.28	13/90	—	—
September	74	82	65	2 07	14	7.14	1844	0.39	1847	1.57	24/85	—	—
October	68	75	60	2 16	14	6.67	1906	0.26	1850	2.58	4/06	—	—
November	63	75	55	2.55	12	8.92	1849	0.16	1868	3.70	30/85	—	—
December	60	73	51	1.87	10	9.00	1875	0.11	1842	2.27	27/07	—	—
Year Totals	—	—	—	23.36	136	—		—		—		—	—
Year Averages	71	—	—	—	—	—		—		—		—	—
Year Extremes	—	92	51	—	—	10.16	8/1858	0.02	3/1843	5.02	20/4/09	—	—

— Signifies no record kept.

SECTION IV.

POPULATION.

§ 1. Special Characteristics of Commonwealth Population.

1. **Sex Distribution.**—In respect of the relative proportions of the sexes in its population, Australia has, since the first settlement of the continent in 1788, differed materially from the older countries of the world. In the latter, the populations have, in general, grown by natural increase, and their composition usually reflects that fact, the numbers of males and females being in most countries approximately equal, with a more or less marked tendency, however, for the females to slightly exceed the males. The excess of females arises from a variety of causes, amongst which may be mentioned—(*a*) higher rate of mortality amongst males; (*b*) greater propensity on the part of males to travel; (*c*) the effects of war; (*d*) employment of males in the army, navy, and mercantile marine; (*e*) preponderance of males amongst emigrants. On the other hand, the last-mentioned cause has tended naturally to produce an excess of males in Australia, since the majority of those emigrating to Australia have been males. The circumstances under which the colonisation of Australia was first undertaken, and the remoteness of this country from Europe, have combined to accentuate this feature.

There is little doubt that the continent presented few attractions to the explorers who visited its shores, mainly on the west and north, during the sixteenth, seventeenth, and early part of the eighteenth centuries, and it was only when the Declaration of Independence of the United States, in 1776, closed to the British prison authorities the North American plantations, which had previously been used as receptacles for the deportation of convicts, that the overcrowding of the gaols caused them to consider the advisability of converting the great southern continent into a convict settlement. This idea was put into practice in 1787, when the first consignment left England, arriving in Sydney Cove on 26th January, 1788. Reports concerning the number of persons actually landed are conflicting, but it appears that the total may be set down approximately at 1035, including the military. Details as to the sexes are not available, but the males must have largely preponderated. Indeed, nearly nine years later, on the 31st December, 1796, in a total population of 4100, there were 257 males to every 100 females.

The subsequent progress of Australia resulting from extensive mineral discoveries and the development of its great natural resources, pastoral, agricultural, forestal, etc., have tended to attract male rather than female immigrants, particularly in view of the distance from the principal centres of European population. Even at the end of 1909, after more than 120 years of settlement, there were 111 males to each 100 females, and this notwithstanding the equalising tendency due to additions to the population by means of births and to deductions therefrom by the deaths of immigrants.

The terms "masculinity" and "femininity" have been used to express the proportion of the sexes in any group, the former indicating the ratio of males to females, the latter the reciprocal of this, viz., the ratio of females to males. The term "masculinity" is that which has been adopted by the Commonwealth Bureau of Census and Statistics,

and the masculinity of any group is usually expressed numerically as the number of males to each 100 females. The masculinity of the population of the Commonwealth at intervals of five years from 1800 to 1905, and also for the years 1906, 1907, 1908, and 1909 is as follows :—

MASCULINITY OF THE COMMONWEALTH POPULATION, 1800 to 1909.

Year.	Number of Males to each 100 Females.	Year.	Number of Males to each 100 Females.	Year.	Number of Males to each 100 Females.
1800	263.05	1845	163.38	1890	116.06
1805	233.35	1850	143.20	1895	113.41
1810	190.53	1855	145.48	1900	110.55
1815	188.84	1860	140.15	1905	111.23
1820	243.71	1865	125.38	1906	111.70
1825	329.77	1870	121.10	1907	111.48
1830	308.30	1875	118.25	1908	111.31
1835	260.71	1880	117.28	1909	111.46
1840	201.75	1885	118.33		

The curious inequalities of the increases in the number of males and in the number of females for the Commonwealth as a whole, and for the individual States respectively, will be seen by referring to the graphs on pages 158 and 159.

The significance of the rates of masculinity shewn in the above table will perhaps be better understood by a comparison with the corresponding information for other countries. This has been made in the next table, which shews, for some of the principal countries of the world for which such particulars are available, the masculinity of the population according to the most recent statistics :—

MASCULINITY OF THE POPULATION OF VARIOUS COUNTRIES.

Country.	Year.	No. of Males to each 100 Females.	Country.	Year.	No. of Males to each 100 Females.
New Zealand	1909	112.52	Ireland	1901	97.40
Australia	1909	111.46	Prussia	1905	97.38
India (Feudatory States)	1901	106.02	Russia (European) ...	1897	97.18
Servia	1905	105.87	German Empire	1905	97.17
Canada	1901	105.04	France	1901	96.85
United States of America	1900	104.87	Austria	1900	96.65
Rumania	1899	103.30	Sweden	1908	95.67
British India	1901	103.26	Spain	1900	95.36
Japan	1908	102.05	Scotland	1901	94.58
Poland (Russian) ...	1897	101.42	Denmark	1906	94 52
Greece	1907	101.37	Norway	1900	94.37
Belgium	1900	98.70	England and Wales ...	1901	93.63
Netherlands	1908	98.59	Portugal	1900	91.53

2. **Age Distribution.**—The causes which operated to bring about an excess of males in the population of the Commonwealth have been equally effective in rendering the age distribution essentially different from that of older countries. The majority of the immigrants, whether male or female, were in the prime of life, and as the Australian birth-rate in earlier years was a comparatively high one, the effect produced is a population in which the number of young and middle-aged persons is somewhat above, and the number for advanced ages somewhat below the normal.

Thus in the Commonwealth at the Census of 31st March, 1901, the age distribution of the population was as shewn in the table hereunder ; that for England and Wales is given also for the sake of comparison :—

AGE DISTRIBUTION OF POPULATION.

COMMONWEALTH AND ENGLAND AND WALES, AT CENSUS OF 31ST MARCH, 1901.

Age Group.	Population of Commonwealth.	Percentage on Total Population.	Population of England and Wales.	Percentage on Total Population.
Under 15	1,325,323	35.12	10,545,739	32.42
15 and under 65 ...	2,297,689	60.88	20,464,351	62.91
65 and upwards ...	150,789	4.00	1,517,753	4.67
Total	3,773,801	100.00	32,527,843	100.00

During the past 40 years, the age distribution of the Australian population has varied considerably, as will be seen from the following table, which gives for each sex the proportion per cent. of the total population in the age groups "under 15," "15 and under 65," and "65 and over." The figures upon which these percentages have been computed are those furnished by the Censuses of the several States. Those for 1861 include the results of the Western Australian Census of 1859, while those for 1871 include the results of the Western Australian and Tasmanian Censuses of 1870 :—

AGE DISTRIBUTION OF COMMONWEALTH POPULATION, 1861 to 1901.

Census Year.	Males.				Females.				Persons.			
	Under 15 Years	15 and under 65.	65 and over.	Total.	Under 15 Years	15 and under 65	65 and over.	Total.	Under 15 Years	15 and under 65.	65 and over.	Total.
	%	%	%	%	%	%	%	%	%	%	%	%
1861	31.41	67 42	1.17	100	43.03	56.20	0.77	100	36.28	62.72	1.00	100
1871	38.84	59.11	2.05	100	46.02	52.60	1.38	100	42.09	56.17	1.74	100
1881	36.37	60.85	2.78	100	41.89	56.07	2.04	100	38.91	58.65	2.44	100
1891	34.77	62.02	3.21	100	39.36	58.08	2.56	100	36.90	60.20	2.90	100
1901	33.87	61.82	4.31	100	36.50	59.85	3.65	100	35.12	60.88	4.00	100

The excess of males over females, previously referred to, is found mainly in ages of 21 and upwards. In the total population under the age of 21 there were, at the date of the last Census, less than 102 males to each 100 females, while in that aged 21 and upwards there were more than 118 males to each 100 females. In the absence of a large immigration of males, therefore, the disparity between the sexes in Australia would soon be eliminated.

3. **Race and Nationality.**—(i.) *Constitution of Australia's Population.* As regards race, the population of the Commonwealth may be conveniently divided into two main groups, one comprising the aboriginal natives of Australia, and the other the various immigrant races which, since the foundation of settlement in 1788, have made the Commonwealth their home. Under the head of "immigrant races" would, of course, be included not only those residents of Australia who had been born in other countries, but also their descendants born in Australia.

(*a*) *The Aborigines.* It would appear that the aboriginal population of Australia was never large, and that the life led by them was, in many parts of the country, a most precarious one. With the continued advance of settlement the numbers have shrunk to such an extent that in the more densely populated States they are practically negligible. Thus, at the Census of 1901 the number of full-blooded aboriginals and nomadic half-castes living with those of full blood remaining in New South Wales was stated to be 4287, while in Victoria the total was only 271, and in Tasmania the last aboriginal native died in 1876. In Queensland, South Australia, and Western Australia, on the other hand, there are considerable numbers of natives still in the "savage" state, numerical

information concerning whom is of a most unreliable nature, and can be regarded as little more than the result of mere guessing.

Ethnologically interesting as is this remarkable and rapidly-disappearing race, practically all that has been done to increase our knowledge of them, their laws, habits, customs, and language, has been the result of more or less spasmodic and intermittent effort on the part of enthusiasts either in private life or the public service. Strange to say, an enumeration of them has never been seriously undertaken in connection with any State Census, though a record of the numbers who were in the employ of whites, or living in contiguity to the settlements of whites, has usually been made. As stated above, various guesses at the number of aboriginal natives at present in Australia have been made, and the general opinion appears to have prevailed that 150,000 might be taken as a rough approximation to the total. Recent estimates, however, have given results considerably below this total. Thus, in his report of June, 1908, the Queensland Chief Protector of Aborigines estimates the total at 74,030, distributed as follows :—New South Wales, 6960 ; Victoria, 270 ; Queensland, 20,000 ; South Australia (including the Northern Territory) 19,800 ; Western Australia, 27,000. A somewhat similar estimate made by Dr. Roth, formerly Chief Protector of Aborigines in Queensland, gives Queensland at least 18,000 ; Western Australia at least 24,000, and the Northern Territory from 20,000 to 22,000. In view of these figures it would appear that the number of aboriginal natives in Australia may be said to be not more than 100,000. The whole matter, however, is involved in considerable doubt, and it is proposed to make an attempt to estimate the aboriginal population of Australia in connection with the first Commonwealth Census to be taken in 1911.[1]

The number of aboriginal natives enumerated in the several States of the Commonwealth at the Census of 1901 was as follows :—

ABORIGINAL NATIVES ENUMERATED AT CENSUS OF 1901.

Persons, etc	N.S.W.	Victoria	Queensland.	South Australia	Western Australia	Tasmania.	Commonwealth.
Males	2,451	163	3,089	14,076	2,933	0	22,712
Females	1,836	108	2,048	12,357	2,328	0	18,677
Total	4,287[1]	271	5,137	26,433	5,261	0	41,389
Masculinity[2] ...	133.5	150.9	150.8	113.9	126.0	—	121.6

1. Including 509 half-castes living in nomadic state with natives of full blood.
2. Number of males per hundred females.

These figures, as noted above, refer only to those natives who were, at the date of the census, in the employ of whites or were living in contiguity to the settlements of whites.

In the Commonwealth Constitution Act provision is made for aboriginal natives to be excluded for all purposes for which statistics of population are made use of under the Act, but the opinion has been given by the Commonwealth Attorney-General that, "in reckoning the population of the Commonwealth, half-castes are not aboriginal natives within the meaning of section 127 of the Commonwealth of Australia Constitution Act, and should therefore be included." It may be added, however, that as "half-castes," living in the nomadic state, are practically undistinguishable from aborigines, it has not always been found practicable to make the distinction, and further, that no authoritative definition of "half-caste" has yet been given.

(*b*) *Immigrant Races.* As regards the immigrant races, it may be said that they consist mainly of natives of the three divisions of the United Kingdom and their descendants. The proportion of Australian-born contained in the population of the Commonwealth has, in recent years, increased rapidly, and at the Census of 31st March, 1901,

1. An article on the Aborigines of Australia, specially written for the Year Book by W. Ramsay Smith, D.Sc., M.B., C.M., F.R.S.E., Permanent Head of the Department of Public Health of South Australia will be found in Section IV., § 12, page 158, Year Book No. 3.

out of a total population of 3,765,879 persons whose birthplaces were specified, no fewer than 2,908,303, or 77.23 per cent., were Australian born, while of the remainder, 679,159, or 18.03 per cent., were natives of the United Kingdom, and 25,788, or 0.68 per cent., were natives of New Zealand, that is, 95.94 per cent. of the total population at the date of the Census had been born in either Australasia or the United Kingdom. The other birthplaces most largely represented in the Commonwealth were Germany, 38,352 (1.02 per cent.); China, 29,907 (0.79 per cent.); Scandinavia (comprising Sweden, Norway and Denmark), 16,144 (0.43 per cent.); Polynesia, 10,363 (0.28 per cent.); British India, 7637 (0.20 per cent.); United States of America, 7448 (0.20 per cent.); and Italy, 5678 (0.15 per cent.). The total population of Asiatic birth was 47,014 (1.25 per cent.), of whom 3593 were born in Japan.

(ii.) *Biological and Sociological Significance.* As regards race and nationality, therefore, the population of Australia is fundamentally British, and thus furnishes an example of the transplanting of a race into conditions greatly differing from those in which it had been developed. The biological and sociological significance of this will ultimately appear in the effects on the physical and moral constitution produced by the complete change of climatic and social environment, for the new conditions are likely to considerably modify both the physical characteristics and the social instincts of the constituents of the population. At present the characteristics of the Australian population, whether physical, mental, moral, or social, are only in the making, and probably it will not be possible to point to a distinct Australian type until three or four generations more have passed. Even then it is hardly likely that with the great extent of territory and varying conditions presented by the Commonwealth there will be but one type; on the contrary, a variety of types may be expected. The Australian at present is little other than a transplanted Briton, with the essential characteristics of his British forbears, the desire for freedom from restraint, however, being perhaps more strongly accentuated. The greater opportunity for an open-air existence, and the absence of the restrictions of older civilisations, may be held to be in the main responsible for this.

4. **Differences among the States.**—(i.) *Sex Distribution.* The varying circumstances under which the settlement of the several States has been effected, and the essentially different conditions experienced in the due development of their respective resources, have naturally led to somewhat marked differences in the constitution of their populations. In the matter of sex distribution the States in which the normal condition of older countries is most nearly represented are those of Victoria and Tasmania, in the former of which the numbers of males and females have, for some years, been practically identical, while in the latter there are 105 males to each 100 females. In Western Australia and Queensland, on the other hand, the position of affairs is quite abnormal, the numbers of males to each 100 females being respectively 136 and 119.

The variation in the masculinity of the estimated population of the several States and of the Commonwealth as a whole during the past ten years will be seen from the following table:—

MASCULINITY* OF THE POPULATION, 31st DECEMBER, 1900 to 1909.
(COMMONWEALTH.)

Year.	Masculinity of the Population on 31st December.						
	N.S.W.	Vict.	Qld.	S. Aust.	W. Aust.	Tas.	C'wealth.
1900	111.14	101.23	125.33	104.04	157.54	107.97	110.55
1901	110.22	101.37	125.58	103.50	155.85	107.37	110.29
1902	111.17	100.77	124.39	103.08	154.14	108.15	110.42
1903	111.55	100.31	123.91	103.02	149.41	107.65	110.28
1904	112.42	99.96	123.06	105.53	147.15	106.95	110.64
1905	113.40	100.13	122.01	109.28	144.31	106.58	111.23
1906	114.26	100.25	120.66	112.85	142.15	106.46	111.70
1907	114.92	99.88	119.51	112.72	139.08	106.01	111.48
1908	114.36	100.16	118.84	113.94	137.46	105.33	111.31
1909	113.68	101.26	119.31	114.70	136.33	104.62	111.46

*Number of males to each 100 females.

(ii.) *Age Distribution.* The disparity in sex distribution exhibited by the several States is accompanied by a corresponding inequality in the matter of age distribution. The number of persons in each State at the Census of 31st March, 1901, at what are commonly known as the "dependent," "supporting," and "old" ages, and the proportion of same to total of each State and Commonwealth were as follows :—

NUMBER AND PROPORTION OF PERSONS IN THE COMMONWEALTH OF DEPENDENT, SUPPORTING, AND OLD AGE.

State.	Number of Persons of				Proportion of Population of		
	Dependent age (under 15).	Supporting age (15 and under 65).	Old age (65 and upwards).	All ages.	Dependent age (under 15).	Supporting age (15 and under 65).	Old age (65 and upwards).
					%	%	%
New South Wales ...	486,996	821,277	46,573	1,354,846	35.94	60.62	3.44
Victoria	409,363	725,647	66,060	1,201,070	34.08	60.42	5.50
Queensland ...	182,432	302,824	12,873	498,129	36.62	60.79	2.59
South Australia ...	129,237	218,982	14,938	363,157	35.59	60.30	4.11
Western Australia ...	53,270	127,532	3,322	184,124	28.93	69.26	1.81
Tasmania	64,025	101,427	7,023	172,475	37.12	58.81	4.07
Commonwealth ...	1,325,323	2,297,689	150,789	3,773,801	35.12	60.88	4.00

Thus in Western Australia a larger proportion of its population was of supporting age than in any other State. In Tasmania the proportion was the lowest. On the other hand, in Tasmania the proportion of dependent age was the highest for the Commonwealth, while the Western Australian proportion was the lowest. Victoria had the highest and Western Australia the lowest proportion of persons aged 65 years and upwards.

(iii.) *Birthplaces.* Complete information concerning the race and nationality of the population is not available in the Census returns, the material there furnished of this nature being the records of birthplaces. The following table exhibits, in a very condensed form, the distribution of the population of the several States according to birthplace :—

BIRTHPLACES AT CENSUS OF 31st MARCH, 1901.

(COMMONWEALTH.)

Birthplace.	Total Population of Commonwealth at Census.						
	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tas.	C'wealth.
Australia ...	1,079,154	940,830	323,436	289,993	126,952	147,938	2,908,303
New Zealand ...	10,589	9,020	1,571	711	2,704	1,193	25,788
United Kingdom	220,401	214,371	126,159	56,862	41,551	19,815	679,159
Other European Countries ...	20,151	16,548	21,174	9,326	6,076	1,398	74,673
Asia	14,208	8,793	13,878	4,376	4,810	949	47,014
Africa	986	926	378	235	243	101	2,869
America ...	4,813	3,659	1,688	811	1,151	385	12,507
Polynesia ...	1,139	203	8,877	39	78	27	10,363
At Sea	1,967	1,564	634	539	317	182	5,203
Unspecified ...	1,438	5,156	334	265	242	487	7,922
Total ...	1,354,846	1,201,070	498,129	363,157	184,124	172,475	3,773,801

The proportions for the several States for each of the birthplaces shewn in the foregoing table expressed as percentages of the total population, the birthplaces of which were specified, are as follows:—

PERCENTAGE OF COMMONWEALTH POPULATION ACCORDING TO BIRTHPLACE, 31ST MARCH, 1901.

Birthplace.	Percentage of Total Population.						
	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Commonwealth.
	%	%	%	%	%	%	%
Australia	79.74	78.67	64.97	79.91	69.04	86.02	77.23
New Zealand ...	0.78	0.75	0.32	0.20	1.47	0.69	0.68
United Kingdom ...	16.28	17.93	25.34	15.67	22.60	11.52	18.03
Other European Countries	1.49	1.38	4.25	2.57	3.30	0.81	1.98
Asia	1.05	0.74	2.79	1.21	2.62	0.55	1.25
Africa	0.07	0.08	0.08	0.06	0.13	0.06	0.08
America	0.36	0.30	0.34	0.22	0.63	0.22	0.33
Polynesia	0.08	0.02	1.78	0.01	0.04	0.02	0.28
At Sea	0.15	0.13	0.13	0.15	0.17	0.11	0.14
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00

As regards distribution according to birthplace, the population of New South Wales is very similar to that of Victoria, the proportions born in Australia and Asia being slightly higher, and that born in the United Kingdom slightly lower, in the case of New South Wales. There is also a rough similarity between the population distributions of Queensland and Western Australia. In both, the Australian-born represent a much smaller, and those born in the United Kingdom, in "Other European Countries" and in Asia, a much larger proportion than is the case with the remaining States. Polynesians were, however, much more numerously represented in Queensland at the date of the Census than in any other State, but this position has been considerably modified by the subsequent deportation of Kanakas. Natives of New Zealand were, proportionately, most numerous in Western Australia. Tasmania had the largest proportion of Australian-born population, viz., 86 per cent., while Queensland, with 65 per cent., had the smallest. On the other hand, more than 25 per cent. of Queensland's population consisted of natives of the United Kingdom, while only 11½ per cent. of the population of Tasmania had been born there. For the Commonwealth as a whole 98 per cent. of the population were from Australasian or European birthplaces.

§ 2. Commonwealth Population—Its Distribution and Fluctuation.

1. **Present Population.**—The estimated population of the several States of the Commonwealth at the end of each of the last ten years is as follows:—

POPULATION OF COMMONWEALTH on 31st DECEMBER, 1900 to 1909.

Year.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Commonwealth.
			MALES.				
1900	716,047	601,773	274,684	184,637	110,088	89,763	1,976,992
1901	721,043	609,546	281,658	186,007	118,241	90,289	2,006,784
1902	738,783	608,038	283,195	186,106	129,386	92,202	2,037,710
1903	752,627	605,364	285,297	187,151	135,960	93,045	2,059,444
1904	771,248	605,038	287,799	191,355	144,255	93,123	2,092,818
1905	792,682	609,677	290,206	197,484	150,494	93,435	2,133,978
1906	814,139	616,748	292,609	203,499	153,652	92,898	2,173,545
1907	838,913	623,683	294,959	208,076	152,159	94,690	2,212,480
1908	849,164	636,102	299,953	216,858	154,625	95,325	2,252,027
1909	862,755	655,745	311,534	222,264	157,798	95,541	2,305,637
			FEMALES.				
1900	644,258	594,440	219,163	177,470	69,879	83,137	1,788,347
1901	654,197	601,336	224,286	179,724	75,868	84,091	1,819,502
1902	664,549	603,410	227,660	180,552	83,942	85,256	1,845,369
1903	674,697	603,491	230,237	181,670	90,995	86,435	1,867,525
1904	686,014	605,268	233,861	181,324	98,035	87,070	1,891,572
1905	699,038	608,896	237,847	180,722	104,285	87,664	1,918,452
1906	712,558	615,192	242,504	180,330	108,094	87,258	1,945,936
1907	730,029	624,412	246,806	184,588	109,404	89,318	1,984,557
1908	742,509	635,072	252,392	190,321	112,486	90,499	2,023,279
1909	758,922	647,612	261,120	193,783	115,745	91,319	2,068,501
			TOTAL.				
1900	1,360,305	1,196,213	493,847	362,107	179,967	172,900	3,765,339
1901	1,375,240	1,210,882	505,944	365,731	194,109	174,380	3,826,286
1902	1,403,332	1,211,448	510,855	366,658	213,328	177,458	3,883,079
1903	1,427,324	1,208,855	515,534	368,821	226,955	179,480	3,926,969
1904	1,457,262	1,210,306	521,660	372,679	242,290	180,193	3,984,390
1905	1,491,720	1,218,573	528,053	378,206	254,779	181,099	4,052,430
1906	1,526,697	1,231,940	535,113	383,829	261,746	180,156	4,119,481
1907	1,568,942	1,248,095	541,765	392,664	261,563	184,008	4,197,037
1908	1,591,673	1,271,174	552,345	407,179	267,111	185,824	4,275,306
1909	1,621,677	1,303,357	572,654	416,047	273,543	186,860	4,374,138

2. **Growth of Population.**—(i.) *1788 to 1824.* From 1788, when settlement first took place in Australia, until December 1825, when Van Diemen's Land became a separate colony, the whole of the British Possessions in Australia were regarded as one colony, viz., that of New South Wales. The population during this period increased very slowly, and at the end of 1824 had reached only 48,072.

The population with which settlement in Australia was inaugurated, and that at the end of each year until 1824, are as follows:—

POPULATION OF COMMONWEALTH ON 31st DECEMBER, 1788 to 1824.

Year.	Males.	Females.	Total.	Year.	Males.	Females.	Total.
1788[1]	...	...	1,035	1806	5,389	2,521	7,910
1788	...	...	859	1807	5,939	2,855	8,794
1789	...	...	645	1808	6,822	3,441	10,263
1790	...	...	2,056	1809	7,618	3,942	11,560
1791	...	...	2,873	1810	7,585	3,981	11,566
1792	...	...	3,264	1811	7,697	4,178	11,875
1793	...	...	3,514	1812	8,132	4,498	12,630
1794	...	...	3,579	1813	9,102	4,855	13,957
1795	...	...	3,466	1814	9,295	4,791	14,086
1796	2,953	1,147	4,100	1815	9,848	5,215	15,063
1797	3,160	1,184	4,344	1816	11,690	5,863	17,553
1798	3,367	1,221	4,588	1817	14,178	7,014	21,192
1799	3,804	1,284	5,088	1818	17,286	8,573	25,859
1800	3,780	1,437	5,217	1819	21,366	10,106	31,472
1801	4,372	1,573	5,945	1820	23,784	9,759	33,543
1802	5,208	1,806	7,014	1821	26,179	9,313	35,492
1803	5,185	2,053	7,238	1822	27,915	9,449	37,364
1804	5,313	2,285	7,598	1823	30,206	10,426	40,632
1805	5,395	2,312	7,707	1824	36,871	11,201	48,072

1. On 26th January.

(ii.) *1825 to 1858.* The period extending from 1825 to 1859 witnessed the birth of the colonies of Tasmania (then known as Van Diemen's Land), Western Australia, South Australia, Victoria, and Queensland. The years in which these came into existence as separate colonies were as follows:—Tasmania, 1825; Western Australia, 1829; South Australia, 1836; Victoria, 1851; Queensland, 1859.

The estimated population of the Commonwealth during each year of this transition period is as follows:—

POPULATION OF COMMONWEALTH ON 31st DECEMBER, 1825 to 1858.

Year.	Males.	Females.	Total.	Year.	Males.	Females.	Total.
1825	40,288	12,217	52,505	1842	153,758	87,226	240,984
1826	41,289	12,593	53,882	1843	158,846	92,002	250,848
1827	43,053	13,247	56,300	1844	165,034	99,253	264,287
1828	44,778	13,419	58,197	1845	173,159	105,989	279,148
1829	46,946	14,988	61,934	1846	181,342	111,907	293,249
1830	52,885	17,154	70,039	1847	190,265	118,532	308,797
1831	57,037	18,944	75,981	1848	201,612	130,716	332,328
1832	62,254	21,683	83,937	1849	221,978	151,384	373,362
1833	71,669	26,426	98,095	1850	238,683	166,673	405,356
1834	76,259	29,297	105,556	1851	256,975	180,690	437,665
1835	81,929	31,425	113,354	1852	304,126	209,670	513,796
1836	89,417	35,703	125,120	1853	358,203	242,789	600,992
1837	94,881	39,607	134,488	1854	414,337	280,580	694,917
1838	105,271	46,597	151,868	1855	470,118	323,142	793,260
1839	115,480	54,459	169,939	1856	522,144	354,585	876 729
1840	127,306	63,102	190,408	1857	574,800	395,487	970,287
1841	144,114	76,854	220,968	1858	624,380	426,448	1,050,828

(iii.) *1859 to 1909.* From 1859, the year in which Queensland came into existence as a separate colony, until the beginning of 1901, when the Commonwealth of Australia was inaugurated under the provisions of the Commonwealth Constitution Act, Australia consisted of six States, practically independent of each other in all matters of government. During this period, the population of the Commonwealth increased from 1,050,828 at the end of 1858 to 3,765,339 on the 31st December, 1900. The particulars for this period are given in the table hereunder.

During the nine years that have elapsed since the federation of the States was effected the population of the Commonwealth has increased by 608,799, from 3,765,339 on 31st December, 1900, to 4,374,138 on 31st December, 1909. See table hereunder:—

POPULATION OF COMMONWEALTH ON 31st DECEMBER, 1859 to 1909.

Year.	Males.	Females.	Total.	Year.	Males.	Females.	Total.
1859	644,376	452,929	1,097,305	1885	1,460,394	1,234,124	2,694,518
1860	668,560	477,025	1,145,585	1886	1,510,954	1,277,096	2,788,050
1861	669,373	498,776	1,168,149	1887	1,559,118	1,322,244	2,881,362
1862	683,650	523,268	1,206,918	1888	1,610,548	1,371,129	2,981,677
1863	704,259	555,033	1,259,292	1889	1,649,094	1,413,383	3,062,477
1864	740,433	584,750	1,325,183	1890	1,692,831	1,458,524	3,151,355
1865	773,278	616,765	1,390,043	1891	1,736,617	1,504,368	3,240,985
1866	800,648	643,307	1,443,955	1892	1,766,772	1,538,981	3,305,753
1867	819,127	664,721	1,483,848	1893	1,791,815	1,570,080	3,361,895
1868	849,272	690,280	1,539,552	1894	1,824,217	1,602,543	3,426,760
1869	875,139	717,018	1,592,157	1895	1,855,539	1,636,082	3,491,621
1870	902,494	745,262	1,647,756	1896	1,887,174	1,665,924	3,553,098
1871	928,918	771,970	1,700,888	1897	1,917,460	1,700,323	3,617,783
1872	947,422	795,425	1,742,847	1898	1,937,629	1,727,086	3,664,715
1873	972,907	821,613	1,794,520	1899	1,959,074	1,756,914	3,715,988
1874	1,001,096	848,296	1,849,392	1900	1,976,992	1,788,347	3,765,339
1875	1,028,489	869,734	1,898,223	1901	2,006,784	1,819,502	3,826,286
1876	1,061,477	897,202	1,958,679	1902	2,037,710	1,845,369	3,883,079
1877	1,102,340	928,790	2,031,130	1903	2,059,444	1,867,525	3,926,969
1878	1,132,573	959,591	2,092,164	1904	2,092,818	1,891,572	3,984,390
1879	1,168,781	993,562	2,162,343	1905	2,133,978	1,918,452	4,052,430
1880	1,204,514	1,027,017	2,231,531	1906	2,173,545	1,945,936	4,119,481
1881	1,247,059	1,059,677	2,306,736	1907	2,212,480	1,984,557	4,197,037
1882	1,289,892	1,098,190	2,388,082	1908	2,252,027	2,023,279	4,275,306
1883	1,357,423	1,148,313	2,505,736	1909	2,305,637	2,068,501	4,374,138
1884	1,411,996	1,193,729	2,605,725				

It will be seen from the foregoing tables that the population of Australia attained its first million in 1858, seventy years after settlement was first effected; its second million nineteen years later, in 1877; its third million twelve years later, in 1889; and its fourth million sixteen years later, in 1905.

The growth of the total population of the Commonwealth generally, and of each State therein, is graphically shewn on page 157, and of each sex considered separately on pages 158 and 159.

3. **Variations in Masculinity.**—In the second issue of this publication on pages 163 to 165 an extended table was published, shewing the masculinity of the population of each of the States for each year from 1796 to 1907. The following table gives similar particulars for every fifth year from 1800 to 1905, and also for the four years 1906 to 1909. The graphs corresponding to these figures will be found on page 163:—

MASCULINITY OF COMMONWEALTH POPULATION, 1800 to 1909.

Year.	N.S.W.	Victoria.	Queensland.	South Aust.	West Aust.	Tasmania.	C'wealth.
1800	263.05	...	...	...	...	...	263.05
1805	233.35	...	...	...	...	...	233.35
1810	190.53	...	...	...	...	...	190.53
1815	188.84	...	...	...	...	...	188.84
1820	243.71	...	...	...	...	...	243.71
1825	325.51	...	...	...	...	341.71	329.77
1830	317.18	...	...	...	297.29	293.44	308.30
1835	268.40	...	...	...	190.26	251.68	260.71
1840	204.16	...	...	130.10	163.51	229.53	201.75
1845	153.33	...	...	132.75	150.22	215.62	163.37
1850	138.47	...	...	129.15	154.81	179.49	143.20
1855	125.08	187.40	...	100.62	193.55	123.65	145.48
1860	131.29	158.85	149.63	105.06	166.93	123.61	140.15
1865	120.08	129.60	158.47	109.11	173.90	116.42	125.38
1870	120.48	121.59	150.31	105.85	161.17	112.98	121.10
1875	119.09	114.46	152.61	107.24	148.61	111.45	118.25
1880	120.45	110.42	142.50	114.33	135.06	111.70	117.28
1885	121.95	110.61	143.95	110.58	135.47	110.73	118.33
1890	118.05	110.65	132.21	108.60	146.85	111.88	116.06
1895	113.78	105.23	128.15	105.05	226.54	108.16	113.41
1900	111.14	101.23	125.33	104.04	157.54	107.97	110.55
1905	113.40	100.13	122.01	109.28	144.31	106.58	111.23
1906	114.26	100.25	120.66	112.85	142.15	106.46	111.70
1907	114.92	99.88	119.51	112.72	139.08	106.01	111.48
1908	114.36	100.16	118.84	113.94	137.46	105.33	111.31
1909	113.68	101.26	119.31	114.70	136.33	104.62	111.46

§ 3. Influences affecting Growth and Distribution of Population.

1. **Mineral Discoveries.**—The discovery of gold in Australia in 1851 was undoubtedly one of the most influential factors in bringing about a rapid settlement of the country. Its effect may be gauged by a comparison of the increase during the ten years preceding, with that during the ten years succeeding the discovery. From 31st December, 1840, to 31st December, 1850, the increase was only 214,948 (viz., from 190,408 to 405,356). The rush of people to the newly-discovered goldfields during the succeeding decennium caused an increase of no less than 740,229, the population advancing to 1,145,585 on 31st December, 1860. In 1861, owing to the opening up in that year of the New Zealand goldfields, a rush of population from Australia set in, the result being that the net increase of population of the Commonwealth, which in 1854 amounted to 98,343, and even in 1860 was as much as 48,108, fell in 1861 to 22,564. In fact, during the year 1861 the departures from Australia exceeded the arrivals by 5958, the gain of 22,564 being due to the births exceeding the deaths by 28,522.

In more recent years the gold discoveries of Western Australia in 1886 and subsequent years, led to such extensive migration to that State that its population, which on 31st December, 1885, amounted to only 35,959, increased in 24 years by no less than 237,584, totalling 273,543 on 31st December, 1909. In this case, however, the additions to the population of the western State were largely drawn from those of the eastern States, so that the actual gain of population to the Commonwealth was but slight.

2. **Pastoral Development.**—Very early in the colonisation of Australia it was recognised that many portions were well adapted for pastoral pursuits, and pastoral developments have led to a considerable distribution of population in various directions. As the numbers engaged in connection therewith, compared with the value of the interests involved, are relatively small, and as pastoral occupancy tends to segregation rather than aggregation of population, the growth of pastoral industry is but slightly reflected in the population statistics of the Commonwealth.

3. **Agricultural Expansion.**—At the present time the area annually devoted to crops in the Commonwealth is nearly 11 millions of acres. Although considerable in itself, this area, viewed in relation to the total area of the Commonwealth, is relatively small, and represents only about ½ per cent. of the total area. Per head of population of the Commonwealth the area under crop, however, is 2½ acres, a fairly high amount when allowance is made for the recency of Australian settlement. About 80 per cent. of the area under crop is devoted to the production of wheat and hay, which require for their profitable production in Australia a considerable area in the one holding. Thus on the whole the agricultural districts of Australia are somewhat sparsely populated, though in a less marked degree than is the case in the pastoral areas.

4. **Progress of Manufacturing Industries.**—One direct effect of the development of manufacturing industries is the concentration of population in places offering the greatest facilities for the production of the particular commodities. In Australia, where manufacturing industries are as yet in their infancy, the tendency throughout has been to concentrate the manufacturing establishments in each metropolis. This has accentuated the growth of the capital cities, which growth, when compared with that of the rest of the country, appears somewhat abnormal.

5. **Influence of Droughts.**—The droughts, which at times so seriously affect the agricultural and pastoral prospects of Australia, have a marked influence on the distribution of population. Districts, which in favourable seasons were fairly populous, have, in times of drought, temporarily become more or less depopulated until the return of better conditions. This movement, however, ordinarily affects only the internal distribution of the population and not the total, but severe drought may even make its influence felt in the statistics of the total population of Australia. Thus in the case of the drought of 1902-3, the departures from the Commonwealth exceeded the arrivals for the two years 1903 and 1904 by 10,380. It may be noted also, that for the former of these years, the natural increase of population by excess of births over deaths was abnormally low, being only 51,150, as compared with 54,698 in the preceding and 60,541 in the succeeding year. As the solution of the problem of dealing with droughts is advanced, their influence will be less marked.

6. **Other Influences.**—(i.) *Commercial Crises.* The effect on population of a commercial crisis, such as that which occurred in Australia in the early years of the final decade of the last century, is clearly indicated on comparing the migration statistics of the Commonwealth for the five years 1887-91 with those for the five years 1892-96. During the former period, the arrivals in the Commonwealth exceeded the departures by no less than 146,872. In the latter period, the corresponding excess amounted to only 2064.

(ii.) *South African War.* The war in South Africa has apparently also left its impress on the population statistics of the Commonwealth, the departures during 1899 and 1900 exceeding the arrivals for the same period by no less than 10,546.

A reference to the graphs of population on pages 157 to 162 will illustrate the preceding observations.

§ 4. Elements of Growth of Population.

1. **Natural Increase.**—The two factors which contribute to the growth of a population are the "natural increase" by excess of births over deaths, and the "net immigration," *i.e.*, the excess of arrivals over departures. While the relative potency of these factors depends upon a variety of causes, it may be said that, in general, in the case of a new country, "net immigration" occupies an important position as a source of increase of population, while in an old country "natural increase," modified more or less by "net emigration," or excess of departures over arrivals, is the only element causing growth of population. The table hereunder gives the total natural increase, as well as that of males and females :—

NATURAL INCREASE[1] OF THE POPULATION OF STATES AND COMMONWEALTH, FROM 1861 TO 1909.

MALES.

Period.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
1861 to 65	22,055	34,286	2,444	9,645	765	3,761	72,956
1866 to 70	25,850	34,997	5,739	10,881	754	3,281	81,502
1871 to 75	30,067	35,132	6,704	9,979	710	3,077	85,669
1876 to 80	34,040	31,985	7,960	13,676	1,023	3,472	92,156
1881 to 85	42,658	33,614	7,986	16,969	1,002	5,284	107,513
1886 to 90	54,753	39,528	17,872	16,519	1,755	6,093	136,520
1891 to 95	56,834	45,606	20,525	15,758	1,436	6,889	147,048
1896 to 1900 ...	48,692	33,645	17,724	12,562	3,402	6,373	122,398
1901 to 1905 ...	51,179	34,332	16,628	11,926	8,283	7,955	130,303
1906 to 1909 ...	50,098	30,664	16,749	11,048	8,667	6,913	124,139
1861 to 1909 ...	416,226	353,789	120,331	128,963	27,797	53,098	1,100,204

FEMALES.

1861 to 65	26,343	39,615	3,566	9,987	1,105	4,415	85,031
1866 to 70	30,327	40,919	7,571	11,223	1,301	4,451	95,792
1871 to 75	35,567	41,472	9,706	10,944	1,255	4,192	103,136
1876 to 80	40,276	37,551	12,291	14,608	1,585	4,699	111,010
1881 to 85	50,204	39,833	15,262	18,033	1,738	6,364	131,434
1886 to 90	62,090	48,131	24,238	17,320	2,609	7,228	161,616
1891 to 95	63,930	53,190	25,757	16,792	3,376	7,781	170,826
1896 to 1900 ...	57,107	40,474	24,037	13,443	7,054	6,718	148,833
1901 to 1905 ...	59,163	39,831	22,910	12,729	11,468	8,027	154,128
1906 to 1909 ...	56,040	34,208	20,289	11,491	10,604	6,846	139,478
1861 to 1909 ...	481,047	415,224	165,627	136,570	42,095	60,721	1,301,284

EXCESS OF NATURAL INCREASE OF FEMALES OVER THAT OF MALES, 1861-1909.

Number	64,821	61,435	45,296	7,607	14,298	7,623	201,080
Percentage on Male Increase ...	15.57%	17.36%	37.64%	5.90%	51.44%	14.36%	18.28%

1. Excess of Births over Deaths.

PERSONS.

Period.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
1861 to 65	48,398	73,901	6,010	19,632	1,870	8,176	157,987
1866 to 70	56,177	75,916	13,310	22,104	2,055	7,732	177,294
1871 to 75	65,634	76,604	16,410	20,923	1,965	7,269	188,805
1876 to 80	74,316	69,536	20,251	28,284	2,608	8,171	203,166
1881 to 85	92,862	73,447	23,248	35,002	2,740	11,648	238,947
1886 to 90	116,843	87,659	42,110	33,839	4,364	13,321	298,136
1891 to 95	120,764	98,796	46,282	32,550	4,812	14,670	317,874
1896 to 1900 ...	105,799	74,119	41,761	26,005	10,456	13,091	271,231
1901 to 1905 ...	110,342	74,163	39,538	24,655	19,751	15,982	284,431
1906 to 1909 ...	106,138	64,872	37,038	22,539	19,271	13,759	263,617
1861 to 1909 ...	897,273	769,013	285,958	265,533	69,892	113,819	2,401,488

With a single exception, viz., Tasmania, for the period 1906 to 1909, the natural increase of females exceeded that of males throughout the 49 years referred to in the foregoing table. This excess, for the total period 1861 to 1909, is shewn in the table both in absolute numbers and as percentages of the male increase. The quinquennial period in which the largest natural increase of population took place was that of 1891-5 with a total for the Commonwealth of 317,874. For the individual States the quinquennia of maximum natural increase were as follows:—New South Wales, Victoria and Queensland 1891-5, South Australia 1881-5, and Western Australia and Tasmania 1901-5.

2. **Comparison with other Countries.**—Notwithstanding its comparatively low birth-rate, Australia has a high rate of natural increase, owing to the fact that its death-rate is a very low one. The following table furnishes a comparison between the average rates of natural increase for some of the principal countries of the world for which such information is available, and those for the several States of the Commonwealth and the Dominion of New Zealand:—

NATURAL INCREASE PER 1000 OF MEAN POPULATION (VARIOUS COUNTRIES).

Country.	Increase.	Country.	Increase.	Country.	Increase.
Australasia (1905-9).		Europe—*continued.*		Europe—*continued.*	
Tasmania ...	19.09	Prussia ...	15.03	Belgium ...	*9.84
Western Australia	18.45	Rumania ...	14.57	Spain	8.88
New Zealand ...	17.61	Denmark ...	14.22	Ireland ...	5.96
New South Wales	16.92	German Empire	*14.13	France ...	0.75
Queensland ...	16.65	Finland ...	*13.23	Asia (1904-8)—	
Commonwealth	15.62	Norway ...	12.72	Japan... ...	*10.25
South Australia...	14.16	England & Wales	11.71	Ceylon ...	7.81
Victoria ...	12.91	Scotland ...	11.55		
		Austria ...	*11.09	America (1904-8)—	
Europe (1904-8)—		Italy	10.99	Jamaica ...	12.40
Bulgaria ...	*20.83	Hungary ...	10.75	Canada (Province	
Servia	15.90	Sweden ...	10.72	of Ontario) ...	†9.03
Netherlands ...	15.31	Switzerland ...	*9.99	Chile	6.11

* 1903-7. † 1902-6.

The graphs of natural increase for each of the States, as well as for the Commonwealth, are shewn on page 162.

3. **Net Immigration.**—The other factor of increase in the population, viz., the excess of arrivals over departures, known as "net immigration," is, from its nature, much more subject to marked and extensive variation than is the factor of "natural increase." These variations are due to numerous causes, many of which have already been referred to in dealing with the influences which affect the growth of population. An important cause not yet referred to, is that of assisted immigration. The number of persons so introduced varies considerably in different years.

NET IMMIGRATION, OR EXCESS OF ARRIVALS OVER DEPARTURES

(STATES AND COMMONWEALTH), FROM 1861 TO 1909 INCLUSIVE.

Period.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
MALES.							
1861 to 65 ...	2,984	—15,871	34,031	10,270	3,213	— 2,865	31,762
1866 to 70 ...	23,381	13,516	10,190	— 242	1,182	— 313	47,714
1871 to 75 ...	20,346	— 8,093	26,236	3,833	— 80	— 1,916	40,326
1876 to 80 ...	48,378	— 5,696	13,892	25,056	— 179	2,418	83,869
1881 to 85 ...	70,996	19,925	54,867	— 1,982	2,701	1,860	148,367
1886 to 90 ...	29,345	51,894	18,514	—12,895	6,411	2,648	95,917
1891 to 95 ...	8,671	—33,192	5,088	— 1,493	39,443	— 2,857	15,660
1896 to 1900...	— 854	—39,805	8,095	— 8,239	36,953	2,905	— 945
1901 to 1905...	25,456	—26,428	— 1,106	921	32,123	— 4,283	26,683
1906 to 1909...	19,975	15,404	4,579	13,732	— 1,363	— 4,807	47,520
1861 to 1909...	248,678	—28,346	174,386	28,961	120,404	— 7,210	536,873
FEMALES.							
1861 to 65 ...	8,578	21,527	18,824	5,993	952	— 1,165	54,709
1866 to 70 ...	9,928	16,702	4,851	1,207	517	— 500	32,705
1871 to 75 ...	9,395	2,498	11,187	774	— 18	— 2,500	21,336
1876 to 80 ...	25,081	— 169	7,792	12,977	130	462	46,273
1881 to 85 ...	38,867	7,861	27,526	— 100	957	562	75,673
1886 to 90 ...	23,220	34,337	14,811	—11,310	1,768	— 42	62,784
1891 to 95 ...	12,793	—13,656	— 422	1,964	7,758	— 1,705	6,732
1896 to 1900...	— 143	—23,777	927	— 7,627	32,043	2,009	3,432
1901 to 1905...	— 4,383	—25,375	— 4,226	— 9,477	22,938	— 3,500	—24,023
1906 to 1909...	3,844	4,508	2,984	1,570	856	— 3,191	10,571
1861 to 1909...	127,180	24,456	84,254	— 4,029	67,901	— 9,570	290,192
PERSONS.							
1861 to 65 ...	11,562	5,656	52,855	16,263	4,165	— 4,030	86,471
1866 to 70 ...	33,309	30,218	15,041	965	1,699	— 813	80,419
1871 to 75 ...	29,741	— 5,595	37,423	4,607	— 98	— 4,416	61,662
1876 to 80 ...	73,459	— 5,865	21,684	38,033	— 49	2,880	130,142
1881 to 85 ...	109,863	27,786	82,393	— 2,082	3,658	2,422	224,040
1886 to 90 ...	52,565	86,231	33,325	—24,205	8,179	2,606	158,701
1891 to 95 ...	21,464	—46,848	4,666	471	47,201	— 4,562	22,392
1896 to 1900...	— 997	—63,582	9,022	—15,866	68,996	4,914	2,487
1901 to 1905...	21,073	—51,803	— 5,332	— 8,556	55,061	— 7,783	2,660
1906 to 1909...	23,819	19,912	7,563	15,302	— 507	— 7,998	58,091
1861 to 1909...	375,858	— 3,890	258,640	24,932	188,305	—16,780	827,065

Throughout, the minus sign (—) signifies that the number of departures was in excess of arrivals.

During the period 1861-1909, viz., 49 years, the gain to the Commonwealth population by excess of arrivals over departures was 827,065 persons, while the gain by excess of births over deaths for the same period was 2,401,488. That is, nearly 26 per cent. of the increase for the Commonwealth during the past 49 years has been due to "net immigration" and about 74 per cent. to "natural increase." In regard to the contribution of individual States to the total net immigration of 827,065, it may be said that for two, viz., Victoria and Tasmania, the departures for the period in question actually exceeded the arrivals, viz., by 3890 in the case of the former, and 16,780 in that of the latter, while in South

Australia the total gain for the period was only 24,932. In New South Wales, Queensland, and Western Australia, on the other hand, the additions due to net immigration during the 49 years were respectively 375,858; 258,640; and 188,305.

The quinquennial period in which the greatest net immigration to the Commonwealth occurred was that of 1881-5 with a total of 224,040, whilst that in which the smallest was recorded was the period 1896-1900 with the total of only 2487. The quinquennial periods in which maximum net immigration occurred in the several States were as follows:—New South Wales and Queensland 1881-5, Victoria 1886-90, South Australia 1876-80, Western Australia and Tasmania 1896-1900. In all the States quinquennial periods have occurred in which the departures for the five years have exceeded the arrivals. The periods in which such net emigration from the several States was greatest were as follows:—New South Wales and Victoria 1896-1900, Queensland 1901-5, South Australia 1886-90, Western Australia and Tasmania 1906-9.

The graphs shewing net increase, both for the Commonwealth as a whole and for each of the States, will be found on pages 160 and 161.

4. **Total Increase.**—(i.) *Rates for various Countries.* The table hereunder furnishes particulars concerning rates of increase in population for the Commonwealth, its component States, and other countries:—

RATES OF INCREASE IN POPULATION, 1881 to 1908 (VARIOUS COUNTRIES).

Countries.	Mean Annual Rate of Increase in Population during period—					
	1881 to 1886.	1886 to 1891.	1891 to 1896.	1896 to 1901.	1901 to 1906.	1906 to 1908.
	%	%	%	%	%	%
AUSTRALASIA—						
Commonwealth ...	3.86	3.06	1.86	1.49	1.49	1.87
New South Wales ...	4.83	3.23	1.99	1.57	2.11	2.11
Victoria	2.60	3.12	0.37	0.52	0.34	1.55
Queensland	8.42	3.80	2.49	2.25	1.13	1.60
South Australia ...	1.41	1.15	1.63	0.77	0.97	3.00
Western Australia ...	6.13	5.54	20.81	7.25	6.16	1.02
Tasmania	2.18	2.87	1.06	1.83	0.65	1.56
New Zealand	3.31	1.47	2.41	1.98	2.90	2.72
EUROPE—						
England and Wales ...	1.11	1.11	1.15	1.15	1.15	1.16
Scotland	0.75	0.75	1.06	1.06	1.06	1.06
Ireland	—0.95	—0.94	—0.60	—0.43	—0.26	—0.19
Austria	0.73	0.83	0.79	1.05	0.96	*1.02
Belgium	1.13	0.75	1.15	0.92	1.26	1.02
Denmark	1.05	0.87	0.99	1.32	1.10	1.75
Finland	1.42	1.51	1.20	1.41	1.32	*1.42
France	0.34	0.06	0.09	0.24	0.14	†0.00
German Empire ...	0.74	1.09	1.17	1.51	1.47	*1.40
Hungary	1.09	1.01	0.92	1.03	1.01	1.03
Italy	0.66	0.71	0.68	0.61	0.65	0.87
Netherlands	1.32	1.03	1.28	1.30	1.53	1.36
Norway	0.36	0.54	0.96	1.31	0.55	0.55
Prussia	0.79	1.15	1.29	1.59	1.57	1.49
Rumania	1.77	1.34	1.15	1.41	1.46	1.40
Servia	2.30	2.08	1.37	1.57	1.52	1.56
Spain	0.54	0.48	0.45	0.45	0.45	0.79
Sweden	0.57	0.40	0.61	0.86	0.61	0.82
Switzerland	0.38	0.40	1.22	1.10	0.95	*0.96
ASIA—						
Ceylon	0.54	1.35	1.41	2.03	2.07	0.51
Japan	0.96	1.12	0.96	1.25	1.29	*1.93
AMERICA—						
Canada	1.10	1.08	0.97	1.19	2.08	8.89
Chile	2.97	0.72	2.66	0.90	0.26	1.78
Jamaica	0.77	1.37	1.66	1.72	1.63	0.96
United States ...	2.27	2.15	1.93	2.02	1.62	1.92

— Decrease. * 1906 to 1907 only. † No increase.

(ii.) *Variations in the Commonwealth Rate.* During the twenty-seven years 1881-1908, the annual rate of increase in the population of the Commonwealth has exhibited a marked decline, falling from an average of 3.86 per cent. for the five years 1881-6 to an average of 1.49 for 1901-6, the rate for the latter period being also the average for the five years 1896-1901. During the years 1907 and 1908, however, an improvement took place, the rate of increase being 1.87 per cent., or almost identical with the rate for the period 1891-6. For the year 1909 the rate of increase was 2.31 per cent. As regards the separate States of the Commonwealth, the rates of increase in all cases except that of Western Australia were lower, and in most instances considerably lower, for the period 1901-6 than for 1881-6, while in all cases except those of New South Wales and Western Australia the rate of increase for 1906-8 was higher than for the preceding quinquennium, the rate for New South Wales for the two periods being identical.

(iii.) *Unsatisfactory Nature of Commonwealth Rate.* The annual rate of increase in the Commonwealth population for the quinquennium 1901-6 was practically identical with the annual rate for Germany, the figures being respectively 1.49 per cent. and 1.47 per cent. In view of the sparsity of the population of Australia, and the recency of its settlement, this rate of increase, equal only to that of such a densely populated country as Germany, cannot be regarded as satisfactory. When contrasted with the growth of population in the United States the comparison is even less favourable, since the annual rate of increase of that country for the period 1901-6 was 1.62 per cent. Further, if the increase in the population of the Commonwealth be compared with that of the United States under comparable conditions as to density of population, it will be seen that whilst during the seventy years 1790-1860 the population of the United States increased at a rate of slightly more than 3 per cent. per annum, that of the Commonwealth, during the ten years 1900-1909, increased at little more than half that rate. The full significance of the difference between these two rates of increase will be seen on comparing the figures shewn in line (*a*) below with those appearing on line (*b*). The former represent the population of the Commonwealth in the years specified, on the assumption that the rate of increase experienced in the Commonwealth during the ten years 1900-1909, viz., 1.64 per cent., remains permanently in force, while the latter shew what it would be in the same years if the rate of increase experienced in the United States during the seventy years 1790-1860 were in force.

SIGNIFICANCE OF PRESENT RATE OF GROWTH OF COMMONWEALTH POPULATION.

	31st Dec., 1909.	31st Dec., 1910.	31st Dec., 1915.	31st Dec., 1920.	31st Dec., 1930.	31st Dec., 1940.	31st Dec., 1950.
(*a*)	4,374,138	4,446,000	4,824,000	5,233,000	6,160,000	7,250,000	8,534,000
(*b*)	4,374,138	4,507,000	5,234,000	6,078,000	8,198,000	11,056,000	14,910,000

(*a*) On basis of Commonwealth rate of increase 1900-1909.
(*b*) On basis of U.S.A. rates of increase 1790-1860.

These are not predictions as to the probable future population of the Commonwealth, but computations shewing what the population will be if rate of increase for the period specified is maintained, and what it would be if the increase were as rapid as in the United States at a comparable period.

5. **Density of Population.**—From one aspect population may be less significant in respect of its absolute amount than in respect of the density of its distribution. The Commonwealth of Australia, with an area of 2,974,581 square miles, and a population on 31st December, 1909, of 4,374,138 has a density of only 1.47 persons to the square mile, and is, therefore, the most sparsely populated of the civilised countries of the world. For the other continents the densities are approximately as follows:—Europe, 114; Asia, 53; Africa, 13; and America, 11. The population of the Commonwealth has thus about 13 per cent. of the density of that of America, about 11 per cent. of that of Africa, about 2½ per cent. of that of Asia, and about 1¼ per cent. of that of Europe.

Particulars concerning the number and density of the population of the various countries of the world for the latest dates for which such information is available are given in the following table. These figures have in the main been derived from the 1910 issue of the "Statesman's Year Book," and in some instances, more particularly in the case of Africa, must be considered as rough approximations only, complete data not being obtainable :—

NUMBER AND DENSITY OF THE POPULATION OF THE VARIOUS COUNTRIES OF THE WORLD.

Country.	Population.		Country.	Population.	
	Number.	*Density		Number.	*Density
Continents—			Cambodia	1,800,000	40.00
Europe	440,863,936	114.21	Bokhara	1,250,000	15.06
Asia	937,548,519	55.25	Federated Malay States	965,850	36.61
Africa	138,882,714	13.32	Khiva	800,000	33.33
North & Central America and the West Indies ...	120,529,471	13.94	Borneo and Sarawak ...	660,000	7 94
South America	48,076,462	6.69	Laos	650,000	6 63
Australasia & Polynesia	7,243,937	2.09	Straits Settlements ...	628,016	392.51
			Oman	500,000	6.10
			Goa	475,513	323.70
Total	1,693,145,039	33.45	Hong Kong & Territory	421,499	1,080.77
			Timor, etc.	300,000	40.93
Europe—			French India	287,402	1,466.34
Russia (including Poland Ciscaucasia & Finland)	132,771,700	62.55	Cyprus	258,997	72.26
German Empire ...	62,982,000	301.67	Bhutan	250,000	12.50
Austria - Hungary (incl. Bosnia & Herzegovina)	50,816,092	194.67	Wei-hai-wei	130,792	458.92
United Kingdom ...	45,008,421	370.77	Bahrein Islands ...	70,000	280 00
France	39,267,000	189.65	Macao, etc.	63,991	15,997.75
Italy	34,269,764	309.69	Damao and Din ...	56,285	333 05
Spain	19,712,585	101.21	Aden & Dependencies ...	41,222	4.58
Belgium	7,386,444	649.47	Kiauchau	33,000	165.00
Rumania	6,771,722	133.51	Brunei	25,000	8.33
Turkey (including Crete)	6,440,385	93.73	Tientsin	17,000	944.44
Netherlands	5,825,198	460 56	Sokotra & Kuria Muria Is.	12,000	8.68
Sweden	5,429,600	31.41	Labuan	8,245	274.83
Portugal	5,197,000	146.44			
Bulgaria & E. Roumelia	4,158,409	109.20	Total	937,548,519	55.25
Switzerland	3,559,349	222.79			
Servia	2,784,000	149.28	**Africa—**		
Denmark (incl. Iceland)	2,737,470	49.46	Congo Independ't State	20,000,000	21.99
Greece	2,631,952	105.22	Turkish Dependencies (incl. Egypt & Sudan)	14,600,359	8.35
Norway	2,352,786	18.95	German East Africa ...	10,003,387	26.05
Montenegro	250,000	68.87	Abyssinia	10,000,000	50 00
Luxemburg	236,543	237.02	French Congo	10,000,000	14.95
Malta	212,888	1,819.56	Northern Nigeria Prot.	7,164,751	27.94
Monaco	19,121	2,390 13	Southern Nigeria & Prot.	6,500,000	84.13
Gibraltar	18,316	9,158.00	Senegambia and Niger ...	5,500,000	78 57
San Marino	10,310	271.32	Algeria	5,231,850	15 23
Liechtenstein	9,650	148 46	Morocco	5,000,000	22.83
Andorra	5,231	29 89	Angola	4,119,000	8.50
			British East Africa Prot.	4,038,000	20.19
Total	440,863,936	114.21	Uganda Protectorate ...	3,520,400	29.91
			Portuguese East Africa	3,120,000	10.63
Asia—			Kamerun	3,000,000	15.70
China & Dependencies ...	433,553,030	101.36	Madagascar & adjacent Islands	2,706,661	11.87
British India	231,555,533	211.20	Cape Colony	2,507,500	9.05
Feudatory Indian States	62,461,549	92.50	Tunis	2,000,000	40.00
Japan & Dependencies ...	53,122,206	303.70	Liberia	1,800,000	45.00
Dutch East Indies ...	37,800,000	64.66	Gold Coast and Protect.	1,697,000	14.23
Russia in Asia	22,661,600	3.47	Rhodesia	1,604,875	3.65
Turkey in Asia	17,736,924	25.57	French Guinea ...	1,550,000	16 32
Tonking	10,000,000	215.52	Transvaal and Swaziland	1,355,442	11 59
Korea	10,000,000	116.28	Sierra Leone and Protect.	1,252,000	41.73
Persia	9,500,000	15.13	Natal	1,206,386	34 11
Philippine Islands ...	7,635,426	59.72	Togoland	1,000,300	29.68
Siam	6,686,846	34.29	Ivory Coast	1,000,000	7.69
Annam	6,124,000	117.54	Nyasaland Protectorate	997,217	22.87
Nepál	5,000,000	92.59	Portuguese Guinea ...	820,000	58.82
Afghanistan	4,750,000	19.00	French Sahara ...	800,000	0 52
Ceylon	3,988,064	157.43	Dahomey	655,000	10 08
Cochin China	2,968,529	148.43	Orange River Colony ...	466,380	9.26
Arabia (Independent) ...	2,000,000	2.07	Eritrea	450,000	9.83
			Italian Somaliland ...	400,000	3 08
			Mauritius and Depend. ...	380,144	455.26
			Basutoland	348,848	33.89

* Number of persons per square mile.

NUMBER AND DENSITY OF THE POPULATION OF THE VARIOUS COUNTRIES OF THE WORLD.—Continued.

Country.	Population.		Country.	Population.	
	Number.	*Density		Number.	*Density
British Somaliland ...	348,086	5.12	Turks & Caicos Islands...	5,322	31.49
Zanzibar	250,000	215 10	St. Pierre & Miquelon ...	4,768	51 27
French Somali Coast, etc.	180,000	31.09			
Reunion	177,677	184 12			
Gambia & Protectorate	154,330	42.69	Total	120,529,471	13 94
Cape Verde Islands ...	147,424	99 61			
Rio Muni & C San Juan...	140,000	14.29	South America—		
Bechuanaland Protect....	134,100	0 49	Brazil	21,531,100	6.54
Rio de Oro and Adrar ...	130,000	1 86	Argentine Republic ...	6,805,684	5.99
German S. W. Africa ...	120,000	0.37	Colombia	4,303,000	9 89
Senegal...	107,826	246 18	Peru	3,500,000	5.03
Comoro Islands... ...	86,000	138.71	Chile	3,302,204	11.29
Prince's & St. Thomas Is.	42,103	116 95	Venezuela	2,664,241	6.76
Seychelles	21,982	137.39	Bolivia	2,049,083	3.38
Fernando Po, etc. ...	21,946	98.14	Ecuador	1,400,000	12.07
Mayotte...	11,540	83 14	Uruguay	1,042,686	14.44
Spanish N. & W. Africa	10,412	800.92	Paraguay	631,347	6.44
St. Helena	3,558	75.70	Panama	419,029	13 20
Ascension	130	3.71	British Guiana	304,089	3 37
			Dutch Guiana	81,038	1.76
Total	138,882,714	13.32	French Guiana	39,349	1.29
			Falkland Islands and South Georgia ...	3,610	0.48
North & Central America & West Indies—					
United States	87,189,000	29.32	Total	48,076,462	6.69
Mexico	13,605,919	17.74			
Canada	6,945,000	1.85	Australasia & Polynesia—		
Cuba	2,048,980	46 57	Commonwealth of Australia ...	† 4,474,138	1.50
Haiti	2,029,700	198.91	New Zealand	‡ 1,029,417	9 83
Guatemala	1,882,992	38 90	Papua	501,225	5.54
Salvador	1,116,253	154.50	German New Guinea & Bismarck Archipelago	299,251	3.33
Porto Rico	1,012,775	294 84	Dutch New Guinea ...	200,000	1.32
Jamaica	848,656	202 06	Hawaii	154,001	23.88
San Domingo	610,000	33 80	Solomon Islands (British)	150,247	12 52
Nicaragua	600,000	12 20	Fiji	130,891	17 60
Honduras	500,136	10 81	New Caledonia & Depend.	59,600	6 97
Windward Islands ...	375,152	558 26	German Solomon Is., etc	56,000	10 85
Costa Rica	351,176	19.09	New Hebrides	50,000	10.00
Trinidad and Tobago ...	343,000	183.62	Samoa (German) ...	37,000	37.00
Newfoundland & Labrador	237,047	1 46	French Estab. in Oceania	30,563	20 11
Guadeloupe and Depend.	190,273	276 56	Gilbert Islands... ...	29,475	177.56
Martinique	182,024	477.75	Tonga	22,734	58 29
Leeward Islands ...	172,110	215 52	Guam	11,760	58.80
Alaska	63,592	0.11	Samoa (American) ...	6,668	84.41
Bahamas	60,283	11.06	Norfolk Island	967	96.70
Curaçao	52,088	129.25			
British Honduras ...	43,370	5.65			
Danish West Indies ...	30,527	221 21			
Bermudas	17,535	876.75			
Greenland	11,893	0 25	Total	7,243,937	2.09

* Number of persons per square mile.

† Inclusive of an allowance of 100,000 for Aboriginal Natives. ‡ Inclusive of Maoris and population of Cook and other Pacific Islands.

§ 5. Seasonal Variations of Population.

1. **Natural Increase.**—For the Commonwealth as a whole the natural increase of the population is greatest in the quarter ending 30th September, and least in that ending 31st March. The birth rate is usually at its highest, and the death rate at its lowest, in the September quarter, and *vice versa* in the March quarter. The average natural increase in population of the several States for each of the quarters, based upon the experience of the nine years 1901 to 1909, is given in the following table, from which it will be seen that the quarter in which the rate of natural increase is highest is that ended 30th June for Victoria and Queensland, that ended 30th September for New South Wales and Western Australia, that ended 31st December for Tasmania, while for South

Australia the rate for the quarters ending 30th June and 30th September was identical. The rate of natural increase is lowest in the quarter ended 31st March in all the States except Western Australia, in which the lowest rate occurs in the quarter ended 31st December.

AVERAGE QUARTERLY NATURAL INCREASE, STATES AND COMMONWEALTH, 1901 to 1909.

State.	* Average Natural Increase for Quarter ended on last day of—								Average Natural Increase per annum, 1901-9.	
	March.		June.		September.		December			
	Persons	o/oo	Persons	o/oo	Persons	o/oo	Persons	o/oo	Persons	o/oo
New S'th Wales	5,696	3.88	6,026	4.09	6,249	4.22	6,082	4.08	24,053	16.40
Victoria ...	3,576	2.92	4,067	3.32	4,029	3.28	3,776	3.07	15,448	12.63
Queensland ...	1,916	3.66	2,263	4.31	2,260	4.27	2,069	3.91	8,508	16.27
South Australia	1,168	3.09	1,419	3.75	1,419	3.75	1,238	3.26	5,244	13.89
W. Australia ...	1,003	4.29	1,073	4.53	1,274	5.29	986	4.05	4,336	18.57
Tasmania ...	771	4.30	797	4.46	835	4.71	901	5.07	3,304	18.41
Commonwealth	14,130	3.53	15,645	3.89	16,066	3.98	15,052	3.71	60,893	15.21

* The symbol o/oo denotes "per thousand."

2. **Net Immigration.**—For the Commonwealth as a whole the excess of arrivals over departures for the years 1901 to 1909 was greatest in the September quarter, while in the March quarter the average excess of departures over arrivals was 501. In New South Wales also the September quarter gives the greatest excess of arrivals over departures. In Western Australia the largest excess is in the June quarter. In South Australia and Tasmania the arrivals largely exceeded the departures in the December quarter, but in all the other quarters the departures were in excess. In Queensland, the December quarter shewed an excess of departures over arrivals. Victoria shews an excess of departures for every quarter, except that ended 31st December. Particulars concerning the average net immigration of the several States are as follows:—

AVERAGE QUARTERLY NET IMMIGRATION, STATES AND COMMONWEALTH, 1901 to 1909.

State.	Quarter ended on last day of—								Average Net Immigration per annum, 1901-9.	
	March.		June.		September.		December.			
	Persons	o/oo	Persons	o/oo	Persons	o/oo	Persons	o/oo	Persons	o/oo
N.S.W.	853	0.58	1,257	0.85	3,064	2.07	— 186	—0.12	4,988	3.40
Victoria	—1,371	—1.12	—2,604	—2.13	— 799	—0.65	1,231	1.00	—3,543	—2.90
Q'land	46	0.09	2,474	4.71	72	0.14	—2,344	—4.43	248	0.47
S. Aust.	— 655	—1.73	— 952	—2.52	— 191	—0.50	2,547	6.71	749	1.98
W. Aust.	2,298	9.84	2,878	12.15	1,601	6.65	— 716	—2.93	6,061	25.95
Tas.	—1,672	—9.31	—2,011	—11.28	— 338	—1.91	2,268	12.75	—1,753	—9.77
C'wealth	— 501	—0.13	1,042	0.26	3,409	0.85	2,800	0.69	6,750	1.69

Throughout, the minus sign (—) denotes that the departures were in excess of arrivals, and o/oo denotes per thousand of population.

§ 6. Urban Population.

1. **The Metropolitan Towns.**—A feature of the distribution of population in Australia is the tendency to accumulate in the capital cities. To such an extent is this metropolitan aggregation carried, that in every State the population of the capital far outnumbers that of any other town therein, and ranges between 20 and 44 per cent.

the entire population of the State. The estimated populations of the several capitals on 31st December, 1909, and the percentages of such populations on the totals for the respective States, are shewn in the table hereunder. That this metropolitan concentration is phenomenal, may be readily seen by comparing the percentage on the total population with the similar figures for the principal countries of Europe, also given in the table hereunder:—

METROPOLITAN POPULATION.

(VARIOUS COUNTRIES.)

State or Country.	Metropolis.	Year.	Population.	Percentage on total of State or Country.
				%
New South Wales ...	Sydney	31st Dec., 1909.	605,900	37.36
Victoria	Melbourne		562,300	43.14
Queensland	Brisbane		143,077	24.98
South Australia	Adelaide		184,393	44.32
Western Australia ...	Perth		54,354	19.87
Tasmania	Hobart		38,916	20.83
Commonwealth	(6 Cities)		1,588,940	36.33
New Zealand	Wellington		71,553	7.28
Denmark...	Copenhagen	1906	514,134	19.73
England	London*	1909	4,833,938	14.86
Saxony	Dresden	1905	516,996	11.47
Norway	Christiania	1900	227,626	10.16
Ireland	Dublin	1909	398,356	8.93
Belgium	Brussels	1908	637,807	8.63
Bavaria	Munich	1905	538,983	8.26
Scotland	Edinburgh	1909	355,366	7.95
France	Paris	1906	2,763,393	7.04
Portugal	Lisbon...	1900	356,009	6.56
Greece	Athens	1907	167,479	6.36
Austria	Vienna	1909	2,085,888	7.98
Sweden	Stockholm	1908	339,582	6.25
Prussia	Berlin	1905	2,040,148	5.47
Netherlands	The Hague	1908	259,012	4.45
Hungary	Budapest	1900	732,322	3.80
Spain	Madrid	1900	539,835	2.90
Switzerland	Berne	1908	78,500	2.21
Italy	Rome	1909	575,000	1.68
Russia (European) ...	St. Petersburg ...	1905	1,678,000	1.47

* Population of Greater London 1909, 7,429,740.

2. **Provincial Towns.**—In connection with the particulars shewing the tendency in Australia to concentrate population in the metropolis, it should be borne in mind that in most of the European States the capital is but one of many populous cities, and in some instances is by no means the most populous. In Australia, on the other hand, the metropolis is in every instance the most populous city, and, in some of the States, is also the only town of considerable magnitude. It will be seen from the table on the next page, that there are in all, only eighteen towns in the Commonwealth having a population upwards of 20,000. Of these three are in New South Wales, four in Victoria, five in Queensland, one in South Australia, three in Western Australia, and two in Tasmania.

In the following table are given the estimated populations of the principal Australian towns. These particulars relate to the year 1909. The metropolitan towns are included for the purpose of giving a complete view of the urban population of the Commonwealth. In all cases the populations given for the towns include those of contiguous suburban areas:—

POPULATION OF PRINCIPAL TOWNS IN THE COMMONWEALTH.

Town (including Suburban Areas).	State in which Situated.	Population.
100,000 and upwards—		
Sydney	N.S.W.	605,900
Melbourne	Vic.	562,300
Adelaide	S.A.	184,393
Brisbane	Qld.	143,077
20,000 and under 100,000—		
Newcastle	N.S.W.	66,500
Perth	W.A.	54,354
Ballarat	Vic.	46,620
Bendigo	Vic.	44,100
Toowoomba	Qld.	41,457
Hobart	Tas.	38,916
Broken Hill	N.S.W.	31,000
Kalgoorlie and Boulder	W.A.	29,242
Geelong	Vic.	28,880
Rockhampton	Qld.	28,690
Charters Towers	Qld.	25,500
Ipswich	Qld.	23,354
Launceston	Tas.	21,778
Fremantle	W.A.	20,000
10,000 and under 20,000—		
Warwick	Qld.	19,500
Gympie	Qld.	18,450
Kadina, Moonta & Wallaroo	S.A.	15,834
Townsville	Qld.	15,500
Bundaberg	Qld.	15,190
Mount Morgan	Qld.	14,750
Mackay	Qld.	14,000
Parramatta	N.S.W.	13,600
Maryborough	Qld.	13,500
Port Pirie	S.A.	13,113
Maitland, East and West	N.S.W.	12,200
Goulburn	N.S.W.	10,800
5000 and under 10,000—		
Bathurst	N.S.W.	9,750
Zeehan	Tas.	9,053
Cairns	Qld.	9,000
Castlemaine	Vic.	8,470
Lithgow	N.S.W.	8,260
Granville	N.S.W.	8,000
Claremont and Cottesloe	W.A.	8,000
Orange and East Orange	N.S.W.	7,350
Lismore	N.S.W.	7,250
Tamworth	N.S.W.	7,250
Roma	Qld.	7,111
Albury	N.S.W.	7,000
Mt. Gambier	S.A.	6,947
Grafton and S. Grafton	N.S.W.	6,800
5000 and under 10,000, *cont.*		
Warrnambool	Vic.	6,700
Wagga Wagga	N.S.W.	6,300
Mudgee and Cudgegong	N.S.W.	6,250
Midland Jnctn & Guildford	W.A.	6,000
Maryborough	Vic.	5,950
Rookwood	N.S.W.	5,700
Stawell	Vic.	5,500
Auburn	N.S.W.	5,500
Armidale	N.S.W.	5,200
Devonport	Tas.	5,105
Liverpool	N.S.W.	5,100
Beaconsfield	Tas.	5,058
Cobar	N.S.W.	5,000
Wellington	N.S.W.	5,000
Hamilton	Vic.	5,000
3000 and under 5000—		
Petersburg	S.A.	4,985
Queenstown	Tas.	4,916
Forbes	N.S.W.	4,900
Inverell	N.S.W.	4,700
Dubbo	N.S.W.	4,600
Wollongong	N.S.W.	4,400
Penrith	N.S.W.	4,400
Windsor	N.S.W.	4,250
Ararat	Vic.	4,250
Glen Innes	N.S.W.	4,100
Echuca	Vic.	4,050
St. Arnaud	Vic.	4,050
Wangaratta	Vic.	4,030
Daylesford	Vic.	3,880
Parkes	N.S.W.	3,860
Katoomba	N.S.W.	3,800
Maldon	Vic.	3,780
Casino	N.S.W.	3,750
Horsham	Vic.	3,700
Colac	Vic.	3,680
Sale	Vic.	3,600
Kyneton	Vic.	3,420
Bunbury	W.A.	3,308
Broome	W.A.	3,300
Geraldton	W.A.	3,300
Cowra	N.S.W.	3,200
Gormanston	Tas.	3,152
Bairnsdale	Vic.	3,120
Singleton	N.S.W.	3,100
Young	N.S.W.	3,100
Shepparton	Vic.	3,100
St. Leonards	Tas.	3,058
Tenterfield	N.S.W.	3,000

§ 7. Assisted Immigration.

In the earlier days of settlement in Australia, State-assisted immigration played an important part. Such assistance practically ceased in South Australia in 1886, in Tasmania in 1891, and for the time being, in Victoria in 1873. In New South Wales general State-aided immigration was discontinued in the year 1887, but those who arrived under that system and were still residing in New South Wales might, under special regulations, send for their wives and families. A certain amount of passage money, graduated according to the age of the immigrant, was required to be paid in each case. Under the provisions of these regulations immigrants to the number of 1994 received State assistance during the years 1888 to 1899 inclusive. From 1900 to 1905 no assistance of any kind was given, but from 1906 onwards assistance has again been afforded, a total of 4308 State-assisted immigrants being recorded for the year 1909. In Queensland and Western Australia, such assistance, although varying considerably in volume from year to year, has been accorded for many years past. The numbers so assisted during 1909 were 3501 in Queensland and 1359 in Western Australia. During 1909 assistance to 652 immigrants was rendered by the Victorian Government.

The total number of immigrants to Australia from the earliest times up to the end of 1909, the cost of whose introduction was wholly or partly borne by the State, is approximately as follows:—

ASSISTED IMMIGRANTS UP TO END OF 1909.

STATES AND COMMONWEALTH.

State	N.S.W.	Victoria	Qld.	S. Aust.	W A.	Tas	C'wlth.
No. of Assisted Immigrants	222,701	141,241	176,949	95,348	11,947	21,699	669,885

§ 8. Enumerations and Estimates.

1. **Musters.**—Actual enumerations of Australia's population, of varying accuracy, have been made from the earliest times onward. Originally known as "Musters," these were first undertaken with a view to estimating the food and other requirements of the settlements. These musters, the results of which are said to have been very unreliable, appear to have been carried out at least annually from 1788 to 1825, when they were discontinued.

2. **Census-taking.**—The first regular Census in Australia was that of New South Wales, in November, 1828. The dates on which Censuses have been taken in the several States, and the populations enumerated thereat, are as shewn in table on the page immediately following.

3. **The Census of 1901.**—A conference of the State Statisticians of Australia and New Zealand held in Sydney in February and March, 1900, aimed at securing uniformity in the collection and compilation of the Census of 1901. The householder's schedule which it drafted made provision for the collection of information in all the States under the following heads, viz.:—Name, Sex, Age, Conjugal Condition, Relation to Head of Household, Occupation, Sickness and Infirmity, Birthplace, Length of Residence in Colony, Religion, Education, Materials of Houses and Number of Rooms. In addition to these, it was agreed that States so desiring might include further inquiries relating to Land, Live Stock, Crops, and certain other matters.

Provision was made for uniformity in the classification and compilation of the data by formulating rules for dealing with cases in which differences of opinion as to methods of treatment might exist. Thus, although conducted by six different States, the Census of the Commonwealth, as taken in 1901, was carried out on a fairly uniform plan, and consequently furnished data in many ways suitable for purposes of aggregation or comparison. A detailed examination of the results, however, gives many indications of departure from a common line of action, which, in the absence of a central authority, can hardly be avoided in an undertaking of this nature.

4. **The Census of 1911.**—Under Section 51, sub-section (xi.) of the Constitution Act, power is given to the Parliament of the Commonwealth to make laws with respect to "Census and Statistics." This power was brought into requisition in 1905, when the Census and Statistics Act 1905 became law, being assented to on 8th December, 1905. Under this Act provision is made for the appointment of a Commonwealth Statistician, and amongst other duties that officer is charged with the taking of a Census in the year 1911 and in every tenth year thereafter.

The particulars which the Act requires to be included in the Census schedule are almost identical with those which were contained in the 1901 schedule, the principal

alterations being that "Length of Residence in Australia" is to be asked instead of "Length of Residence in the Colony of Enumeration," that "Duration of Marriage" is to be asked in all cases, and that nationality is to be ascertained in addition to birthplace.

AUSTRALIAN CENSUSES.

Census Year.	Population Enumerated (exclusive of Aborigines).						
	New South Wales.	Victoria.	Queensland	South Australia.	Western Australia.	Tasmania.	Commonwealth. (Total)
1828	(Nov.) 36,598	...	...	...	...	...	...
1833	(2nd Sept.) 60,794	...	...	...	...	...	...
1836	(2nd Sept.) 77,096	...	...	...	...	...	...
1841	(2nd March) 130,856	...	...	...	...	(27th Sept.) 50,216	...
1844	...	...	...	(26th Feb.) 17,366	...	...	...
1846	(2nd March) 189,609	...	...	(26th Feb.) 22,390	...	...	...
1847	...	...	...	...	...	(31st Dec.) 70,164	...
1848	...	...	...	...	(10th Oct.) 4,622	...	...
1851	(1st Mar.) [1] 268,344	...	...	(1st Jan.) 63,700	...	(1st Mar.) 70,130	...
1854	...	(26th Apr.) [2] 234,298	...	...	(30th Sept.) 11,743	...	...
1855	...	...	...	(31st Mar.) 85,821	...	...	...
1856	(1st March) 269,722	...	...	...	...	...	...
1857	...	(29th Mar.) 408,998	...	...	...	(31st Mar.) 81,492	...
1859	...	...	...	...	(31st Dec.) 14,837	...	...
1861	(7th April) 350,860	(7th April) 538,628	(7th April) [2] 30,059	(7th April) 126,830	...	(7th April) 89,977	...
1864	...	...	(1st Jan.) 61,467	...	...	...	...
1866	...	...	...	(26th Mar.) 163,452	...	...	...
1868	...	...	(2nd Mar.) 99,901	...	...	...	...
1870	...	...	...	...	(31st Mar.) 24,785	(7th Feb.) 99,328	...
1871	(2nd April) 502,998	(2nd April) 730,198	(1st Sept.) 120,104	(2nd April) 185,626	...	...	...
1876	...	...	(1st May) 173,283	(26th Mar.) 213,271	...	...	...
1881 [3]	749,825	861,566	213,525	279,865	29,708	115,705	2,250,194
1886	...	...	(1st May) 322,853	...	...	...	...
1891 [4]	1,123,954	1,139,840	393,718	320,431	49,782	146,667	3,174,392
1901 [5]	1,354,846	1,201,070	498,129	363,157	184,124	172,475	3,773,801

1. Including Port Phillip District, which afterwards became the Colony of Victoria. 2. Previously included with New South Wales. 3. 3rd April. 4. 5th April. 5. 31st March.

5. **Estimates of Population.**—In the absence of an annual enumeration of the population, it becomes necessary to adopt some method of estimating it for intercensal periods, basing such estimates on the results of the most recent Censuses. The manner in which this is effected varies, however, in different parts of the world. In England, for example, the assumption made is that the rate of increase of the preceding intercensal period will

continue unchanged during the current period. Again, in the United States, it has been assumed, in certain cases, that the numerical increase per annum ascertained for the preceding intercensal period will hold good for the current period. From the earliest times in Australia, "statistics of fluctuation" have been obtained from the records of births, deaths, arrivals and departures. With reasonable thoroughness in the collection of such statistics, the deduced estimates possess much greater weight than those based on the mere assumption of a continuation of the increase experienced in the preceding period. In most cases, however, estimates of population, based on statistics of fluctuation, are found to be in excess at the Census, thus indicating a uniform tendency to over-estimation, and the necessity for a correction. In the population figures given in the earlier portion of the present section, the estimates of the population of the several States have been carefully revised, the results of the various Censuses being taken in conjunction with the records of births, deaths, arrivals and departures. It is believed that by this means the population of the Commonwealth from the date of settlement onwards has been obtained with a high degree of accuracy, and that the figures supplied represent a reasonably close approximation to the actual numbers. Particulars for the several States from the date of settlement onwards are given in the following tables, and are shewn by graphs on pages 157 to 159:—

COMMONWEALTH POPULATION FROM EARLIEST DATE.

MALES.

Year	Estimated Population at end of Year.						
	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia	Tasmania.	Commonwealth.
1788	....	...	...	...	...	...	†
1790	...	...	...	...	...	...	†
1795	...	...	...	...	...	...	†
1800	3,780	...	...	...	...	...	3,780
1805	5,395	...	...	...	...	...	5,395
1810	7,585	...	...	...	...	...	7,585
1815	9,848	...	...	...	...	...	9,848
1820	23,784	...	...	...	...	...	23,784
1825	29,309	...	...	...	...	10,979*	40,288
1830	33,900	...	...	...	877	18,108	52,885
1835	51,949	...	...	...	1,231	28,749	81,929
1840	85,560	...	...	8,272	1,434	32,040	127,306
1845	113,739	...	...	12,810	2,689	43,921	173,159
1850	154,976	...	...	35,902	3,576	44,229	238,683
1855	147,822	226,462*	...	48,843	8,311	38,680	470,118
1860	197,851	330,302	16,817*	64,340	9,597	49,653	668,560
1865	222,890	348,717	53,292	84,255	13,575	50,549	773,278
1870	272,121	397,230	69,221	94,894	15,511	53,517	902,494
1875	322,534	424,269	102,161	108,706	16,141	54,678	1,028,489
1880	404,952	450,558	124,013	147,438	16,985	60,568	1,204,514
1885	518,606	504,097	186,866	162,425	20,688	67,712	1,460,394
1890	602,704	595,519	223,252	166,049	28,854	76,453	1,692,831
1895	668,209	607,933	248,865	180,314	69,733	80,485	1,855,539
1900	716,047	601,773	274,684	184,637	110,088	89,763	1,976,992
1901	721,043	609,546	281,658	186,007	118,241	90,289	2,006,784
1902	738,783	608,038	283,195	186,106	129,386	92,202	2,037,710
1903	752,627	605,364	285,297	187,151	135,960	93,045	2,059,444
1904	771,248	605,038	287,799	191,355	144,255	93,123	2,092,818
1905	792,682	609,677	290,206	197,484	150,494	93,435	2,133,978
1906	814,139	616,748	292,609	203,499	153,652	92,898	2,173,545
1907	838,913	623,683	294,959	208,076	152,159	94,690	2,212,480
1908	849,164	636,102	299,953	216,858	154,625	95,325	2,252,027
1909	862,755	655,745	311,534	222,264	157,798	95,541	2,305,637

* Previously included with New South Wales. † Details not available.

FEMALES.

Year.	Estimated Population at end of Year.						
	N.S.W.	Victoria.	Qld.	S. Aust.	W Aust.	Tasmania.	C'wealth.
1788	...	...	...	...	...	...	†
1790	...	...	...	...	...	...	†
1795	...	...	...	...	...	...	†
1800	1,437	...	...	...	...	...	1,437
1805	2,312	...	...	...	...	...	2,312
1810	3,981	...	...	...	...	...	3,981
1815	5,215	...	...	...	...	...	5,215
1820	9,759	...	...	...	...	...	9,759
1825	9,004	...	...	...	...	3,213	12,217
1830	10,688	...	...	...	295	6,171	17,154
1835	19,355	...	...	...	647	11,423	31,425
1840	41,908	...	...	6,358	877	13,959	63,102
1845	74,179	...	...	9,650	1,790	20,370	105,989
1850	111,924	...	...	27,798	2,310	24,641	166,673
1855	118,179	120,843*	...	48,544	4,294	31,282	323,142
1860	150,695	207,932	11,239*	61,242	5,749	40,168	477,025
1865	185,616	269,074	33,629	77,222	7,806	43,418	616,765
1870	225,871	326,695	46,051	89,652	9,624	47,369	745,262
1875	270,833	370,665	66,944	101,370	10,861	49,061	869,734
1880	336,190	408,047	87,027	128,955	12,576	54,222	1,027,017
1885	425,261	455,741	129,815	146,888	15,271	61,148	1,234,124
1890	510,571	538,209	168,864	152,898	19,648	68,334	1,458,524
1895	587,294	577,743	194,199	171,654	30,782	74,410	1,636,082
1900	644,258	594,440	219,163	177,470	69,879	83,137	1,788,347
1901	654,197	601,336	224,286	179,724	75,868	84,091	1,819,502
1902	664,549	603,410	227,660	180,552	83,942	85,256	1,845,369
1903	674,697	603,491	230,237	181,670	90,995	86,435	1,867,525
1904	686,014	605,268	233,861	181,324	98,035	87,070	1,891,572
1905	699,038	608,896	237,847	180,722	104,285	87,664	1,918,452
1906	712,558	615,192	242,504	180,330	108,094	87,258	1,945,936
1907	730,029	624,412	246,806	184,588	109,404	89,318	1,984,557
1908	742,509	635,072	252,392	190,321	112,486	90,499	2,023,279
1909	758,922	647,612	261,120	198,783	115,745	91,319	2,068,501

PERSONS.

1788	859	...	...	...	...	...	859
1790	2,056	...	...	...	...	...	2,056
1795	3,466	...	...	...	...	...	3,466
1800	5,217	...	...	...	...	...	5,217
1805	7,707	...	...	...	...	...	7,707
1810	11,566	...	...	...	...	...	11,566
1815	15,063	...	...	...	...	...	15,063
1820	33,543	...	...	...	...	...	33,543
1825	38,313	...	...	...	...	14,192*	52,505
1830	44,588	...	...	...	1,172	24,279	70,039
1835	71,304	...	...	...	1,878	40,172	113,354
1840	127,468	...	...	14,630	2,311	45,999	190,408
1845	187,918	...	...	22,460	4,479	64,291	279,148
1850	266,900	...	...	63,700	5,886	68,870	405,356
1855	266,001	347,305*	...	97,387	12,605	69,962	793,260
1860	348,546	538,234	28,056*	125,582	15,346	89,821	1,145,585
1865	408,506	617,791	86,921	161,477	21,381	93,967	1,390,043
1870	497,992	723,925	115,272	184,546	25,135	100,886	1,647,756
1875	593,367	794,934	169,105	210,076	27,002	103,739	1,898,223
1880	741,142	858,605	211,040	276,393	29,561	114,790	2,231,531
1885	943,867	959,838	316,681	309,313	35,959	128,860	2,694,518
1890	1,113,275	1,133,728	392,116	318,947	48,502	144,787	3,151,355
1895	1,255,503	1,185,676	443,064	351,968	100,515	154,895	3,491,621
1900	1,360,305	1,196,213	493,847	362,107	179,967	172,900	3,765,339
1901	1,375,240	1,210,882	505,944	365,731	194,109	174,380	3,826,286
1902	1,403,332	1,211,448	510,855	366,658	213,328	177,458	3,883,079
1903	1,427,324	1,208,855	515,534	368,821	226,955	179,480	3,926,969
1904	1,457,262	1,210,306	521,660	372,679	242,290	180,193	3,984,390
1905	1,491,720	1,218,573	528,053	378,206	254,779	181,099	4,052,430
1906	1,526,697	1,231,940	535,113	383,829	261,746	180,156	4,119,481
1907	1,568,942	1,248,095	541,765	392,664	261,563	184,008	4,197,037
1908	1,591,673	1,271,174	552,345	407,179	267,111	185,824	4,275,306
1909	1,621,677	1,303,357	572,654	416,047	273,543	186,860	4,374,138

* Previously included with New South Wales. † Details not available.

The tables on the two preceding pages, shewing the quinquennial figures for the male, female, and total population of each State and the Commonwealth, give sufficient indication, for general purposes, of its progress. A reference to the diagrams given hereinafter (pp. 157 to 159), on which the graphs shew the particulars for *each* year, is also desirable. The characteristics of the fluctuations of each element, or of the totals, will be more readily perceived by reference to the graphs than they possibly can by reference to these numerical tables. The earliest date for which particulars as to sex were available was 1796. The figures from 1788 to 1825 inclusive are based upon the results of the musters taken in those years; those for subsequent years are founded upon estimates made on the basis of the Census results and the annual returns of births and deaths and immigration and emigration.

§ 9. Principal Results of Census of 1901.

1. **Census Results.**—In the first issue of the Official Year Book tables are given shewing in some detail particulars for the several States under the headings of Ages, Birthplaces, Occupations, Religions, and Conjugal Condition. Similar information in a very condensed form is given hereunder. For fuller particulars reference should be made to the first issue (see Year Book No. 1, pp. 164 to 179).

2. **Ages.**—The numbers of persons of each sex in some of the more important age groups enumerated in the several States of the Commonwealth at the Census of 31st March, 1901, are as follows:—

AGE DISTRIBUTION OF COMMONWEALTH POPULATION ON 31st MARCH, 1901.

Age Group.	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tas.	Total C'wealth.
			MALES.				
Under 5 years	80,308	66,792	31,307	20,260	10,441	10,702	219,810
5 and under 15	165,771	139,419	60,913	44,949	16,396	21,809	449,257
15 ,, 21	83,177	69,311	28,514	23,625	9,045	11,032	224,704
21 ,, 45	255,828	216,062	106,535	63,123	61,714	31,850	735,112
45 ,, 65	95,320	72,772	37,997	25,128	12,751	10,282	254,250
65 and upwards	27,038	36,813	7,916	7,337	2,259	3,829	85,192
Not stated ...	2,563	2,551	3,821	279	269	120	9,603
Total ...	710,005	603,720	277,003	184,701	112,875	89,624	1,977,928
			FEMALES.				
Under 5 years	78,553	65,163	30,687	19,817	10,234	10,163	214,617
5 and under 15	162,043	137,111	59,504	44,211	16,176	21,351	440,396
15 ,, 21	84,193	71,341	27,160	23,889	7,127	10,872	224,582
21 ,, 45	229,130	223,895	75,475	61,243	30,689	28,161	648,593
45 ,, 65	70,896	68,837	22,319	21,421	5,914	9,083	198,470
65 and upwards	19,535	29,247	4,957	7,601	1,063	3,194	65,597
Not stated ...	491	1,756	1,024	274	46	27	3,618
Total ...	644,841	597,350	221,126	178,456	71,249	82,851	1,795,873

AGE DISTRIBUTION OF COMMONWEALTH POPULATION.—Continued.

Age Group.	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tas.	Total C'wealth.
PERSONS.							
Under 5 years	158,861	131,955	61,994	40,077	20,675	20,865	434,427
5 and under 15	327,814	276,530	120,417	89,160	32,572	43,160	889,653
15 ,, 21	167,370	140,652	55,674	47,514	16,172	21,904	449,286
21 ,, 45	484,958	439,957	182,010	124,366	92,403	60,011	1,383,705
45 ,, 65	166,216	141,609	60,316	46,549	18,665	19,365	452,720
65 and upwards	46,573	66,060	12,873	14,938	3,322	7,023	150,789
Not stated ...	3,054	4,307	4,845	553	315	147	13,221
Total ...	1,354,846	1,201,070	498,129	363,157	184,124	172,475	3,773,801

3. **Birthplaces.**—In the next table is given a summary of the populations of the several States of the Commonwealth on 31st March, 1901, classified according to sex and birthplace, the birthplaces being grouped under the five continental divisions of the globe, with two additional headings for those born in Polynesia, and those born at sea. Of the total population of 3,773,801 those of unspecified birthplace numbered only 7922, or little more than 2 per thousand :—

COMMONWEALTH POPULATION, ON 31st MARCH, 1901,

CLASSIFIED ACCORDING TO BIRTHPLACE.

Birthplace.	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tas.	Total C'wealth.
MALES.							
Australasia ...	546,311	463,736	168,261	143,108	73,315	75,930	1,470,661
Europe ...	143,553	125.364	84,918	36,348	33,632	12,262	436,077
Asia	13,221	8,019	13,291	4,099	4,416	726	43,772
Africa ...	642	503	257	129	160	51	1,742
America ...	3,486	2,376	1,267	570	918	272	8,889
Polynesia ...	783	90	8,446	16	52	11	9,398
At Sea ...	1,100	782	336	259	182	88	2,747
Unspecified ...	909	2,850	227	172	200	284	4,642
Total ...	710,005	603,720	277,003	184,701	112,875	89,624	1,977,928
FEMALES.							
Australasia ...	543,432	486,114	156,746	147,596	56,341	73,201	1,463,430
Europe ...	96,999	105,555	62,415	29,840	13,995	8,951	317,755
Asia	987	774	587	277	394	223	3,242
Africa ...	344	423	121	106	83	50	1,127
America ...	1,327	1,283	421	241	233	113	3,618
Polynesia ...	356	113	431	23	26	16	965
At Sea ...	867	782	298	280	135	94	2,456
Unspecified ...	529	2,306	107	93	42	203	3,280
Total ...	644,841	597,350	221,126	178,456	71,249	82,851	1,795,873

COMMONWEALTH POPULATION—Continued.

Birthplace.	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tas.	Total C'wealth.
			PERSONS.				
Australasia ...	1,089,743	949,850	325,007	290,704	129,656	149,131	2,934,091
Europe ...	240,552	230,919	147,333	66,188	47,627	21,213	753,832
Asia	14,208	8,793	13,878	4,376	4,810	949	47,014
Africa ...	986	926	378	235	243	101	2,869
America ...	4,813	3,659	1,688	811	1,151	385	12,507
Polynesia ...	1,139	203	8,877	39	78	27	10,363
At Sea ...	1,967	1,564	634	539	317	182	5,203
Unspecified ...	1,438	5,156	334	265	242	487	7,922
Total ...	1,354,846	1,201,070	498,129	363,157	184,124	172,475	3,773,801

4. **Occupations.**—In the compilation of the results of the Census of 31st March, 1901, the populations of the several States were tabulated according to occupation in the following classes:—

(i.) *Professional.* Embracing all persons not otherwise classed, mainly engaged in the government and defence of the country, and in satisfying the moral, intellectual, and social wants of its inhabitants.

(ii.) *Domestic.* Embracing all persons engaged in the supply of board and lodging, and in rendering personal services for which remuneration is usually paid.

(iii.) *Commercial.* Embracing all persons directly connected with the hire, sale, transfer, distribution, storage, and security of property and materials.

(iv.) *Transport and Communication.* Embracing all persons engaged in the transport of persons or goods, or in effecting communication.

(v.) *Industrial.* Embracing all persons not otherwise classed who are principally engaged in various works of utility, or in specialities connected with the manufacture, construction, modification, or alteration of materials so as to render them more available for the various uses of man, but excluding, as far as possible, all who are mainly or solely engaged in the service of commercial interchange.

(vi.) *Agricultural, Pastoral, Mineral, and other Primary Producers.* Embracing all persons mainly engaged in the cultivation or acquisition of food products, and in obtaining other raw materials from natural sources.

(vii.) *Indefinite.* Embracing all persons who derive incomes from services rendered, but the direction of which services cannot be exactly determined.

(viii.) *Dependents.* Embracing all persons dependent upon relatives or natural guardians, including wives, children, and others, not otherwise engaged in pursuits for which remuneration is paid, and all persons depending upon private charity, or whose support is a burthen on the public revenue.

Particulars concerning the number contained in each of these classes are given in the table hereunder:—

COMMONWEALTH POPULATION ON 31st MARCH, 1901,

CLASSIFIED ACCORDING TO OCCUPATION.

Occupation.	N.S.W.	Vic.	Qld.	S. Aus.	W. Aus.	Tas.	Total C'wlth.
MALES.							
Class.							
I.—Professional	26,855	20,380	9,122	5,372	5,103	3,067	69,899
II.—Domestic	20,128	13,128	7,791	3,452	4,373	1,463	50,335
III.—Commercial	67,097	64,632	22,958	17,080	10,280	6,097	188,144
IV.—Transport and Communication	42,822	30,318	17,745	12,591	10,736	4,518	118,730
V.—Industrial	122,692	113,507	44,065	34,255	19,602	16,475	350,596
VI.—Primary Producers	168,212	140,112	79,421	45,898	35,081	25,439	494,163
VII.—Indefinite (of independ't means)	3,597	7,242	740	180	207	301	12,267
VIII.—Dependents	256,634	210,922	94,084	64,094	27,229	32,039	685,002
Unspecified	1,968	3,479	1,077	1,779	264	225	8,792
Total	710,005	603,720	277,003	184,701	112,875	89,624	1,977,928
FEMALES.							
I.—Professional	14,529	14,841	4,486	3,485	1,964	1,930	41,235
II.—Domestic	52,690	53,676	16,402	14,529	6,930	6,474	150,701
III.—Commercial	10,567	14,415	3,524	3,085	1,523	1,400	34,514
IV.—Transport and Communication	1,045	1,198	341	259	256	330	3,429
V.—Industrial	23,996	32,706	7,407	6,978	2,208	2,275	75,570
VI.—Primary Producers	4,642	24,998	3,090	3,263	491	2,460	38,944
VII.—Indefinite (of independ't means)	5,927	2,824	691	213	117	357	10,129
VIII.—Dependents	531,164	451,284	184,344	145,214	57,571	66,942	1,436,519
Unspecified	281	1,408	841	1,430	189	683	4,832
Total	644,841	597,350	221,126	178,456	71,249	82,851	1,795,873
PERSONS.							
I.—Professional	41,384	35,221	13,608	8,857	7,067	4,997	111,134
II.—Domestic	72,818	66,804	24,193	17,981	11,303	7,937	201,036
III.—Commercial	77,664	79,047	26,482	20,165	11,803	7,497	222,658
IV.—Transport and Communication	43,867	31,516	18,086	12,850	10,992	4,848	122,159
V.—Industrial	146,688	146,213	51,472	41,233	21,810	18,750	426,166
VI.—Primary Producers	172,854	165,110	82,511	49,161	35,572	27,899	533,107
VII.—Indefinite (of independ't means)	9,524	10,066	1,431	393	324	658	22,396
VIII.—Dependents	787,798	662,206	278,428	209,308	84,800	98,981	2,121,521
Unspecified	2,249	4,887	1,918	3,209	453	908	13,624
Total	1,354,846	1,201,070	498,129	363,157	184,124	172,475	3,773,801

5. **Religions.**—In the Acts under which the Census of 1901 was taken in the several States, persons enumerated were required under penalty to furnish replies to all the inquiries contained in the schedule, with the exception of that relating to religion. In this case, any person objecting to give such particulars was allowed to insert the words "Object to state" in the column provided for religion. Of the total population of 3,773,801 there were 42,131, or 1.12 per cent., who availed themselves of this option. There were also 14,060, or 0.37 per cent., concerning whom no particulars as to religion were obtained.

Of the remainder, 3,626,449, or 97.55 per cent., were members of the various Christian denominations, 53,371 were members of non-Christian religions, 31,011 were of indefinite religious belief, and 6779 stated that they were of no religion.

Amongst the Christian denominations, that most numerously represented was the Church of England, with 1,497,576 adherents, the next in order being the Roman Catholic (850,620), the Methodist (504,101), the Presbyterian (426,105), the Baptist (89,338), the Lutheran (75,021), the Congregational (73,561), and the Salvation Army (31,100).

The principal non-Christian religions represented in Australia were the Hebrew, Mahomedan, Buddhist and Confucian, the members of the Hebrew congregation totalling 15,239.

Those included under the head of "Indefinite" in the attached table consist mainly of persons who stated that they were "Freethinkers" or "Agnostics," or returned themselves as being of "No Denomination," while under the head of "No Religion" are given those who were so returned on the schedules as well as a small number who stated that they were "Atheists."

COMMONWEALTH POPULATION ON 31st MARCH, 1901,

CLASSIFIED ACCORDING TO RELIGION.

Religion.	N.S.W.	Victoria.	Qld.	Sth. Aust.	W. Aust.	Tas.	C'wealth.
MALES.							
Christian ...	678,845	577,191	250,922	171,267	102,564	86,284	1,867,073
Non-Christian ...	11,043	8,577	17,481	4,030	3,042	460	44,633
Indefinite ...	6,451	5,805	3,112	4,096	2,864	627	22,955
No Religion ...	1,424	1,920	612	270	1,138	49	5,413
Object to state...	9,058	6,997	3,424	4,759	2,429	1,776	28,443
Unspecified ...	3,184	3,230	1,452	279	838	428	9,411
Total ...	710,005	603,720	277,003	184,701	112,875	89,624	1,977,928
FEMALES.							
Christian ...	634,656	584,883	216,684	172,900	68,927	81,326	1,759,376
Non-Christian ...	3,439	3,005	942	579	664	109	8,738
Indefinite ...	1,665	2,755	948	1,883	574	231	8,056
No Religion ...	289	550	160	86	272	9	1,366
Object to state...	4,010	3,830	1,366	2,734	624	1,124	13,688
Unspecified ...	782	2,327	1,026	274	188	52	4,649
Total ...	644,841	597,350	221,126	178,456	71,249	82,851	1,795,873
PERSONS.							
Christian ...	1,313,501	1,162,074	467,606	344,167	171,491	167,610	3,626,449
Non-Christian ...	14,482	11,582	18,423	4,609	3,706	569	53,371
Indefinite ...	8,116	8,560	4,060	5,979	3,438	858	31,011
No Religion ...	1,713	2,470	772	356	1,410	58	6,779
Object to state...	13,068	10,827	4,790	7,493	3,053	2,900	42,131
Unspecified ...	3,966	5,557	2,478	553	1,026	480	14,060
Total ...	1,354,846	1,201,070	498,129	363,157	184,124	172,475	3,773,801

6. **Conjugal Condition.**—In the following tables are given summaries of the particulars concerning the population of the several States on 31st March, 1901, classified according to age and conjugal condition. In the case of South Australia divorced persons and persons whose conjugal condition was not stated were included under other heads. The figures given in these tables are exclusive of 1553 half-castes in Queensland, and 553 in South Australia, whose ages and conjugal condition were unspecified :—

COMMONWEALTH POPULATION ON 31st MARCH, 1901,
CLASSIFIED ACCORDING TO CONJUGAL CONDITION AND AGE.
(*a*) MALES.

Age.	N.S.W.	Victoria.	Qld.	Sth. Aust.	W. Aust.	Tas.	Total C'wealth.
MARRIED.							
Under 15 ...	2	...	...	...	...	...	2
15 and under 21 ...	477	245	110	141	55	55	1,083
21 „ 45 ...	123,206	104,080	44,991	30,839	23,370	15,642	342,128
45 „ 60 ...	54,735	42,118	18,921	16,115	6,604	6,640	145,133
60 and upwards ...	24,312	29,477	8,088	7,659	2,005	3,456	74,997
Unspecified adults	190	240	103	...	29	14	576
Total ...	202,922	176,160	72,213	54,754	32,063	25,807	563,919
NEVER MARRIED.							
Under 15 ...	246,354	206,713	92,227	65,209	26,845	32,511	669,859
15 and under 21 ...	82,689	69,062	28,394	23,481	8,987	10,976	223,589
21 „ 45 ...	127,451	107,472	59,745	31,304	37,026	15,503	378,501
45 „ 60 ...	17,291	10,786	9,928	3,534	3,342	1,166	46,047
60 and upwards ...	9,967	10,048	3,557	1,038	1,147	716	26,473
Unspecified adults	498	581	2,788	...	109	45	4,021
Total ...	484,250	404,662	196,639	124,566	77,456	60,917	1,348,490
WIDOWED.							
Under 15 ...	...	...	...	...	...	...	...
15 and under 21 ...	7	4	5	3	3	1	23
21 „ 45 ...	4,034	3,462	1,514	980	1,086	539	11,615
45 „ 60 ...	6,120	4,524	2,276	1,487	981	682	16,070
60 and upwards ...	9,252	11,919	3,001	2,632	854	1,336	28,994
Unspecified adults	38	64	16	...	8	2	128
Total ...	19,451	19,973	6,812	5,102	2,932	2,560	56,830
DIVORCED.							
Under 15 ...	...	...	...	...	...	...	...
15 and under 21 ...	...	...	...	...	...	...	...
21 „ 45 ...	427	151	70	...	81	24	753
45 „ 60 ...	214	91	18	...	26	10	359
60 and upwards ...	50	45	13	...	4	1	113
Unspecified adults	1	2	...	...	...	...	3
Total ...	692	289	101	*	111	35	1,228

* Included under other heads.

(a) MALES—Continued.

Age.	N.S.W.	Victoria.	Qld.	Sth. Aust.	W. Aust.	Tas.	Total C'wealth.
NOT STATED.							
Under 15 ...	...	...	...	...	...	...	...
15 and under 21 ...	4	...	5	...	...	...	9
21 „ 45 ...	710	897	215	...	151	142	2,115
45 „ 60 ...	227	281	71	...	31	55	665
60 and upwards ...	190	296	40	...	16	49	591
Unspecified adults	1,559	1,162	134	...	115	59	3,029
Total ...	2,690	2,636	465	*	313	305	6,409
TOTAL.							
Under 15 ...	246,356	206,713	92,227	65,209	26,845	32,511	669,861
15 and under 21 ...	83,177	69,311	28,514	23,625	9,045	11,032	224,704
21 „ 45 ...	255,828	216,062	106,535	63,123	61,714	31,850	735,112
45 „ 60 ...	78,587	57,800	31,214	21,136	10,984	8,553	208,274
60 and upwards ...	43,771	51,785	14,699	11,329	4,026	5,558	131,168
Unspecified adults	2,286	2,049	3,041	...	261	120	7,757
Total ...	710,005	603,720	†276,230	‡184,422	112,875	89,624	1,976,876

* Included under other heads. † Exclusive of 773 half-castes. ‡ Exclusive of 279 half-castes.

(b) FEMALES.

Age.	N.S.W.	Victoria.	Qld.	Sth. Aust.	W. Aust.	Tas.	Total C'wealth.
MARRIED.							
Under 15 ...	2	...	...	...	...	...	2
15 and under 21 ...	4,837	2,245	1,592	815	720	633	10,842
21 „ 45 ...	144,408	125,585	51,308	36,280	21,797	17,578	396,956
45 „ 60 ...	42,981	36,613	13,990	12,989	3,669	5,240	115,482
60 and upwards ...	13,757	18,058	4,463	5,257	843	1,998	44,376
Unspecified adults	201	340	116	...	14	11	682
Total ...	206,186	182,841	71,469	55,341	27,043	25,460	568,340
NEVER MARRIED.							
Under 15 ...	240,638	202,650	90,205	64,028	26,425	31,514	655,460
15 and under 21 ...	79,266	69,087	25,543	23,060	6,403	10,234	213,593
21 „ 45 ...	76,394	90,379	21,616	23,118	7,804	9,729	229,040
45 „ 60 ...	4,437	5,396	816	1,420	306	788	13,163
60 and upwards ...	1,447	2,102	267	496	58	301	4,671
Unspecified adults	144	312	77	...	8	5	546
Total ...	402,326	369,926	138,524	112,122	41,004	52,571	1,116,473

(*b*) FEMALES—Continued.

Age.	N.S.W.	Victoria.	Qld.	Sth. Aust.	W. Aust.	Tas.	Total C'wealth.
WIDOWED.							
Under 15 ...	...	...	...	...	...	...	...
15 and under 21 ...	30	7	11	14	1	3	66
21 „ 45 ...	7,558	7,309	2,492	1,845	1,014	788	21,006
45 „ 60 ...	11,133	12,367	3,536	2,986	1,027	1,296	32,345
60 and upwards ...	16,429	23,211	4,167	5,874	1,066	2,584	53,331
Unspecified adults	57	127	12	...	4	1	201
Total ...	35,207	43,021	10,218	10,719	3,112	4,672	106,949
DIVORCED.							
Under 15 ...	...	...	...	...	...	...	...
15 and under 21 ...	4	2	1	...	...	...	7
21 „ 45 ...	580	252	33	...	39	18	922
45 „ 60 ...	111	59	10	...	3	3	186
60 and upwards ...	13	13	...	...	...	1	27
Unspecified adults	...	5	...	...	...	...	5
Total ...	708	331	44	*	42	22	1,147
NOT STATED.							
Under 15 ...	...	...	...	...	...	...	...
15 and under 21 ...	56	...	13	...	3	2	74
21 „ 45 ...	190	370	26	...	35	48	669
45 „ 60 ...	42	114	10	...	1	31	198
60 and upwards ...	81	151	17	...	4	35	288
Unspecified adults	45	596	45	...	5	10	701
Total ...	414	1,231	111	*	48	126	1,930
TOTAL.							
Under 15 ...	240,640	202,650	90,205	64,028	26,425	31,514	655,462
15 and under 21 ...	84,193	71,341	27,160	23,889	7,127	10,872	224,582
21 „ 45 ...	229,130	223,895	75,475	61,243	30,689	28,161	648,593
45 „ 60 ...	58,704	54,549	18,362	17,395	5,006	7,358	161,374
60 and upwards ...	31,727	43,535	8,914	11,627	1,971	4,919	102,693
Unspecified adults	447	1,380	250	...	31	27	2,135
Total ...	644,841	597,350	†220,366	‡178,182	71,249	82,851	1,794,839

* Included under other heads. † Exclusive of 760 half-castes. ‡ Exclusive of 274 half-castes.

§ 10. Naturalisation.

1. **The Commonwealth Act.** — The Commonwealth Constitution empowers the Commonwealth Parliament to make laws with respect to "Naturalisation and Aliens," a power which was exercised when the "Naturalisation Act of 1903" was passed. Assented to on 13th October of that year, this Act came into force on 1st January, 1904, in accordance with a proclamation by *Gazette* of 14th November, 1903.

Prior to the passing of this Act the issue of certificates of naturalisation had been a function of the State Governments, carried out under Acts of the several State Legislatures, which, however, did not differ materially from each other, and furnished the basis on which the Commonwealth Act was drafted. From 1st January, 1904, when the Commonwealth Act became operative, the right to issue certificates of naturalisation in the Commonwealth has been vested exclusively in the Federal Government, but all certificates or letters of naturalisation issued under the several State Acts prior to that date entitle the recipients to be deemed to be naturalised under the Commonwealth Act.

The grant of a certificate of naturalisation entitles the recipient within the limits of the Commonwealth to all the rights and privileges, and renders him subject to all the obligations, of a natural-born British subject, with the exception that where, by any Commonwealth or State Constitution or Act, a distinction is made between natural-born British subjects and naturalised persons, such distinction shall hold good in the case of all persons naturalised under the Commonwealth Act.

Applications for certificate of naturalisation must be made to the Governor-General, the qualifications required in an applicant being :—

(i.) That he is not a British subject.

(ii.) That he is not an aboriginal native of Asia, Africa, or the Islands of the Pacific, excepting New Zealand.

(iii.) That he intends to settle in the Commonwealth.

(iv.) (*a*) That he has resided in Australia continuously for two years immediately preceding naturalisation ; or

(*b*) That he has obtained in the United Kingdom a certificate or letters of naturalisation.

An applicant who has already obtained a certificate or letters of naturalisation in the United Kingdom is required to furnish, in support of his application—

(i.) His certificate or letters of naturalisation.

(ii.) His statutory declaration—

(*a*) That he is the person named therein.

(*b*) That he obtained the certificate or letters without fraud or intentional false statement.

(*c*) That the signature and seal thereto are, to the best of his knowledge and belief, genuine.

(*d*) That he intends to settle in the Commonwealth.

If the applicant is not already naturalised in the United Kingdom the particulars which he is required to furnish in support of his application are as follows :—

(i.) His own statutory declaration stating—

(*a*) Name ; (*b*) Age ; (*c*) Birthplace ; (*d*) Occupation ; (*e*) Residence ; (*f*) Length of residence in Australia ; (*g*) Intention to settle in the Commonwealth.

(ii.) A certificate signed by a Justice of the Peace, a postmaster, a teacher of a State school, or an officer of police, that the applicant is known to him and is of good repute.

In connection with any application for naturalisation, the Governor-General in Council is authorised to grant or withhold a certificate as he thinks most conducive to the public good, but the issue of a certificate to any person who is not already naturalised in the United Kingdom is not admissible until the applicant has taken an oath or affirmation of allegiance. The grant of a certificate is made free of charge.

In addition to naturalisation by grant of certificate, the Act makes provision for—

(i.) Naturalisation by marriage.
(ii.) Naturalisation by residence with naturalised parent.

The former relates to the case of a woman who is not herself a British subject, but is married to a British subject; the latter to that of an infant who is not a natural-born British subject, but who has resided at any time in Australia with a father or mother who is a naturalised British subject. In each instance the person concerned is deemed to be naturalised under the Commonwealth Act.

The administration of the Act is carried out by the Department of External Affairs, and the Governor-General is authorised to make such regulations as are necessary or convenient for giving effect to the Act. Up to the present, however, no such regulations have been issued.

2. **Statistics of Naturalisation.**—Particulars relative to the nationalities of the recipients of certificates of naturalisation issued under the Act during each of the five years 1905 to 1909, and to the countries from which such recipients had come, are shewn in the following table:—

COMMONWEALTH NATURALISATION CERTIFICATES GRANTED, 1905 to 1909.

Nationalities of Recipients	No. of Certificates Granted.					Countries from which Recipients of Commonwealth Certificates had come.	No. of Certificates Granted.				
	1905.	1906.	1907.	1908.	1909.		1905.	1906.	1907.	1908.	1909.
German ...	379	446	365	475	1,091						
Swedish ...	120	144	137	157	259	Germany ...	318	360	296	381	948
Italian ...	103	95	98	132	167	Great Britain ...	213	231	209	224	449
Danish ...	82	92	84	93	182	Italy	97	82	82	118	146
Russian ...	77	89	66	83	132	America (North)...	51	78	71	74	147
Norwegian ...	69	73	59	65	138	Sweden	42	64	51	72	108
Austrian ...	65	40	28	45	63	Denmark ...	47	55	44	66	106
French... ...	47	35	46	39	81	Norway	39	41	28	34	62
Swiss	23	24	38	36	70	France	35	21	30	31	40
Greek	61	52	50	33	71	South Africa ...	17	19	23	30	39
American (Nth.)	15	42	31	25	76	Switzerland ...	16	19	26	23	51
Dutch	13	12	8	14	28	Austria	45	17	13	23	24
Spanish ...	6	10	8	11	24	Russia	...	13	11	21	23
Turkish ...	28	1	7	10	10	Egypt	23	20	23	19	31
Rumanian ...	7	6	1	9	3	New Zealand ...	17	26	24	18	55
Belgian ...	4	10	1	7	7	Greece	26	22	25	17	28
Portuguese ...	14	8	7	2	15	Belgium ...	...	17	9	15	15
Chinese ...	...	...	...	2	1	Spain	...	...	...	7	15
Brazilian ...	1	1	1	1	5	Finland	...	10	...	...	12
Bulgarian ...	...	...	1	1	1	Turkey	25	...	...	...	6
Montenegrin ...	...	...	...	1	...	Syria	11	...	...	...	...
Servian ...	...	2	1	...	...	China	...	...	...	...	...
American (Sth.)	...	2	1	...	...	Mauritius ...	...	...	...	...	13
Chilian... ...	...	1	1	...	4	Holland	...	...	...	...	19
Mexican ...	...	...	1	...	1	Poland	...	...	...	...	...
Peruvian ...	...	...	1	...	...	Other Countries ...	96	92	77	68	94
Uruguayan ...	...	...	1	...	...						
Armenian ...	...	1	...	...	...						
Cuban	1	1	...	...	...						
American (Cen.)	1	...	...	...	...						
Icelandic ...	1	...	...	...	2						
Timorian ...	1	...	...	...	...						
Total ...	1,118	1,187	1,042	1,241	2,431	Total ...	1,118	1,187	1,042	1,241	2,431

The following table furnishes particulars concerning the States in which the recipients of Commonwealth certificates of naturalisation during the years 1904 to 1909 were resident. The numbers of certificates granted under the several State Acts during the years 1901, 1902, and 1903 are also given.

NATURALISATION CERTIFICATES GRANTED BY STATES AND COMMONWEALTH, 1901 to 1909.

Year.	N.S.W.	Victoria.	Qld.	S. Aust.	W.A.	Tas.	C'wlth.
1901	507	574	449	109	58	70	1,767
1902	386	500	375	54	111	28	1,454
1903	400	397	355	43	75	149	1,419
1904	1,379	319	115	25	248	21	2,107
1905	544	213	150	34	166	11	1,118
1906	475	301	177	45	150	39	1,187
1907	458	214	193	27	134	16	1,042
1908	396	243	377	45	152	28	1,241
1909	644	507	378	600	221	81	2,431

3. **Census Particulars.**—In the Census Schedule drafted by the Statistical Conference of 1900, provision was made for the inclusion of particulars concerning the number of persons who had become British subjects by naturalisation. This information was obtained in all the States except Queensland, the particulars being as follows:—

NUMBER OF NATURALISED BRITISH SUBJECTS RECORDED AT THE AUSTRALIAN CENSUS OF 1901.

Particulars.	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tasmania.	C'wealth.[2]
Males	3,265	3,304	[1]	1,360	576	119	8,624
Females ...	354	1,262	[1]	545	101	24	2,286
Persons ...	3,619	4,566	[1]	1,905	677	143	10,910

1. Not ascertained. 2. Exclusive of Queensland.

It is probable that the numbers furnished above fall short of the total number of naturalised persons at the date of the Census, as the method of recording the fact of naturalisation on the schedule was that of inserting the letter N after the birthplace, a method which is always liable to lead to errors of omission. Cases also of women who had become naturalised by marriage to British subjects, would probably remain unrecorded in many instances.

§ 11. Graphical Representation of Growth of Population.

1. **General.**—The nature of the fluctuations of the numbers representing (*a*) total population, or those representing (*b*) births and deaths from year to year, or (*c*) the natural increase, *i.e.*, the difference of births and deaths, or (*d*) the net immigration, all of which taken together make up the element of increase of total population, cannot be readily discerned from mere numerical tables. It has been deemed desirable therefore to furnish a series of graphical representations, shewing in some cases the characteristics of these elements from 1788 to 1909, and in others from 1860 to 1909. The graphs furnish at a glance a clear indication of the changes taking place, and of their significance from year to year. The great importance of such representations is that only by their means can the most recent changes be justly apprehended, either in their relation to the past, or their meaning for the future.

2. **Graphs of Total Population** (page 157).—These graphs furnish interesting evidence of the comparatively slow rate of growth of the several States and of the Commonwealth as a whole, during the period from the foundation of settlement in 1788 until 1832. From that year onwards to 1851, a moderately increased rate of progress was experienced. In 1851 gold was discovered in Australia, and the effect of this discovery on the population of the Commonwealth is shewn by the steepness of the curves for New South Wales and Victoria, and also of the Commonwealth, from this point onwards for a series of years. The sudden breaks in the continuity of the curves for New South Wales indicate the creation of new colonies, and their separation from the mother colony. Thus, Tasmania came into existence in 1825, Victoria in 1851, and Queensland in 1859. Owing to the extensive gold discoveries in Victoria, its population increased so rapidly that in 1854 its total passed that of New South Wales, and remained in excess until 1892, when the mother State again assumed the lead, which it has since maintained. The rate of increase in New South Wales is large, but the State is only sparsely populated. A feature of the New South Wales curve is its comparative regularity as compared with that of Victoria, the population of which State increased with great rapidity from 1851 to 1860, less rapidly from 1861 to 1878, with a further period of increased rapidity from 1878 to 1891, and a period of very slow and fluctuating growth from the latter year to 1909. Victoria, however, has a population density more than double that of Tasmania, and nearly three times that of New South Wales.

In the case of Queensland, the curve indicates a rate of growth which, though varying somewhat, has on the whole been satisfactory, and at times very rapid. Periods of particularly rapid increase occurred from 1862 to 1865, from 1873 to 1877, and from 1881 to 1889. The population of Queensland passed that of Tasmania in 1867, and that of South Australia in 1885. The population density of Queensland is less than one-seventeenth of that of Victoria.

The curve for South Australia indicates that with fluctuations more or less marked, the population increased at a moderate rate from the date of the foundation of the colony in 1836 until 1884, and that from that point onwards a diminished rate of increase was experienced. The population of South Australia passed that of Tasmania in 1852. Its density is about half of that of Queensland, about one-twelfth of that of New South Wales, and about one-thirty-third of that of Victoria.

The curve for Western Australia indicates that the population increased regularly but very slowly until 1886, when the discovery of gold in the Kimberley division caused an influx of population. The effects of the further rich discoveries of gold in the Murchison and Coolgardie districts in 1891 and 1892, are clearly shewn in the rapid increase of

population in those and subsequent years to 1897. Two years of retarded progress then occurred, followed by a satisfactorily rapid rate of increase from 1899 to 1906, a slight decline in 1907 and a further advance in 1908 and 1909. The population of Western Australia became greater than that of Tasmania in 1899. Its density is little more than half of that of South Australia, one-third of that of Queensland, one-eighteenth of that of New South Wales, and about one-fiftieth of that of Victoria.

The Tasmanian population curve indicates a comparatively slow rate of growth throughout. Its most noticeable feature is a retardation in increase in 1852 and subsequent years, brought about by the discovery of gold on the mainland. The population density of Tasmania is nearly 40 per cent. greater than that of New South Wales, and a little less than half of that of Victoria.

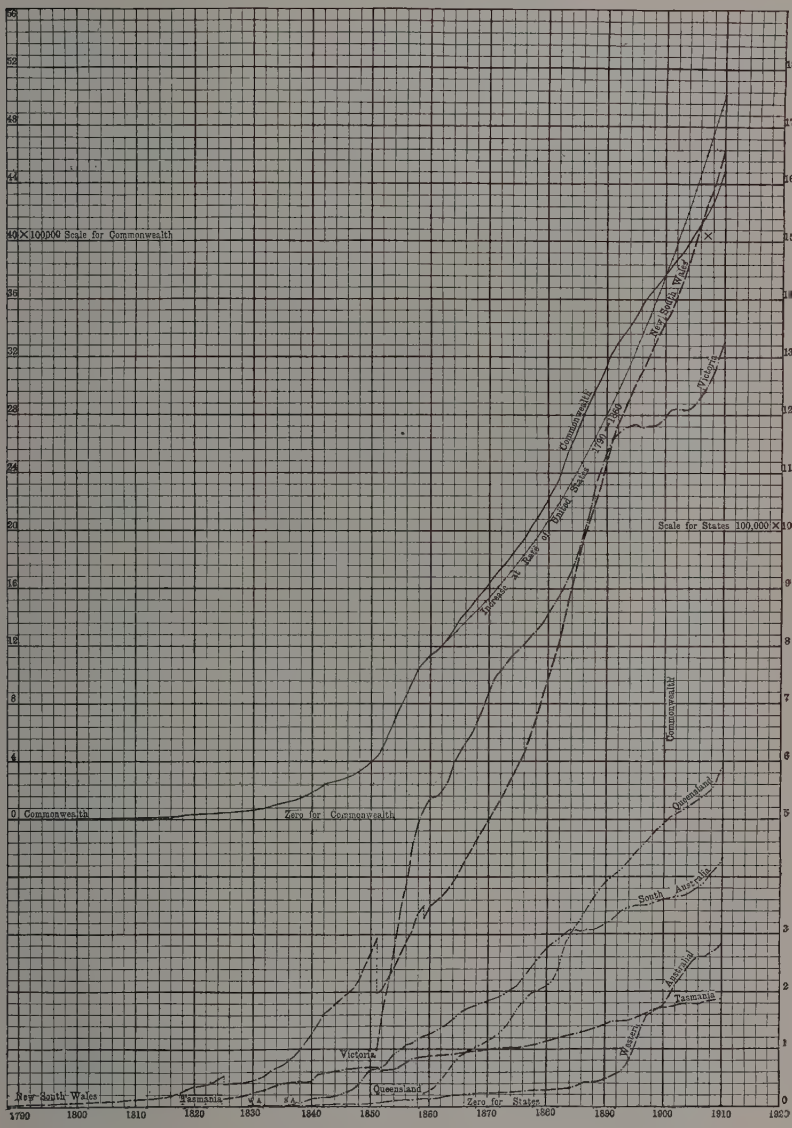
3. **Graphs for Commonwealth of Male and Female Population** (page 158). These curves shew the relative growth of male and female population of the Commonwealth, and it will be seen that the former are far more liable to marked fluctuations than the latter. The curves representing an increase of population on the basis of the United States rate for 1790 to 1860, indicate that on the whole the female rate of increase in the Commonwealth has been a fairly satisfactory one, and that from 1860 to 1893 the same might be said of the male population. From 1893 onwards, however, the male population of the Commonwealth has fallen considerably below this rate, and it may be added that the rapid lowering of the rate of increase of the male population must be regarded as unsatisfactory from a national standpoint.

Although the rate of increase of the female population from 1860 onwards is on the whole very satisfactory, it should be noted that the total number at the beginning of this period was relatively very small, and that from 1894 there is an unsatisfactory falling off in the rate of increase, similar to that experienced in the case of males.

4. **Graphs for each State of Male and Female Population** (page 159).—These graphs, shewing the relative progress in male and female population for each of the States, disclose the fact that in all cases the female population is much less liable to marked fluctuations than the male, and further, that in cases where rapid increases have taken place in the latter a similar, but much more gradual, increase is in evidence in the former, commencing usually, however, somewhat later than in the case of the males. A comparison of the graphs of each of the States with that of the Commonwealth shews that the fluctuations in the latter case are smaller than in the former. This is largely due to internal migrations of the male element of the population, brought about by various causes, amongst which mining developments figure prominently.

5. **Graphs of Natural Increase of Population, Commonwealth and States** (page 162).—The graphs indicate that, with the exception of certain marked variations, the natural increase of the population of the Commonwealth, viz., the excess of births over deaths, advanced with fair rapidity from 1860 to 1892, in which year it attained its maximum, when, however, it fell rapidly till 1898. A subsequent rise to 1900 was followed by a continuous fall for the three years succeeding, viz., to 1903. The recovery shows a fairly rapid rise to 1909. The years in which the natural increase of the Commonwealth was at its highest were 1865, 1871, 1881, 1892, 1900, and 1909; and the years of extraordinarily low rates of natural increase were 1866, 1875, 1882, 1898, and 1903. The low rate of 1898 was due in large measure to a phenomenally high death rate experienced in practically all the States in that year, when an epidemic of measles was prevalent throughout the Commonwealth. The low rate of 1903 was brought about by the low birth rates and high death rates which accompanied the drought of 1902-3, while the advance in the rate of natural increase since 1903 has been collateral with the marked improvement in material conditions experienced throughout the Commonwealth during that period.

GRAPHS OF TOTAL POPULATION OF THE COMMONWEALTH OF AUSTRALIA AND EACH STATE THEREIN, 1788-1910.



(See Tables pages 125 to 127.)

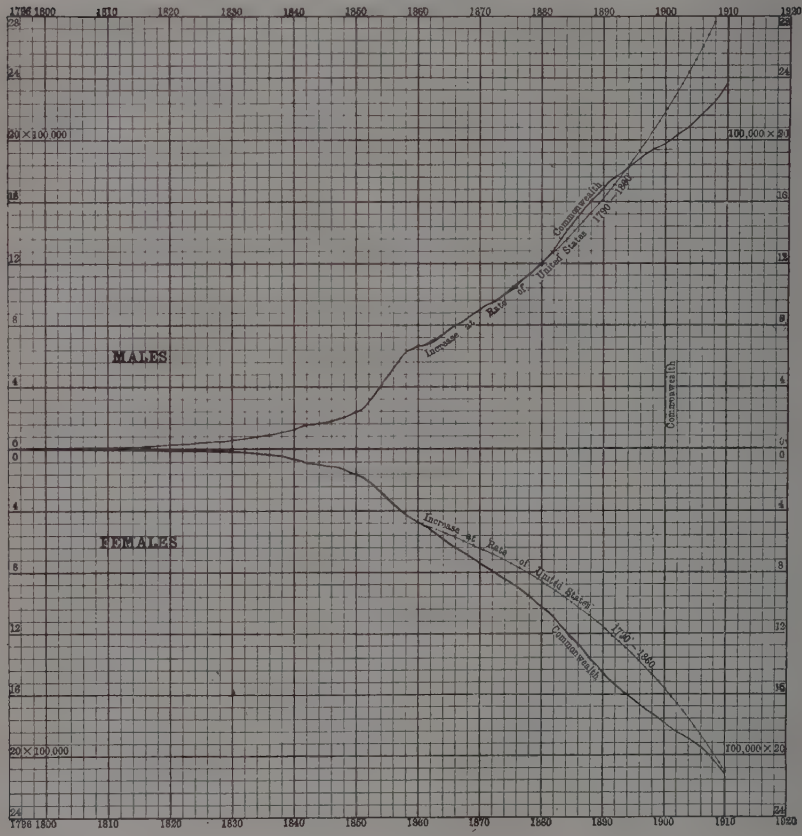
EXPLANATION OF GRAPHS.—The base of each small square represents two years' interval for both States and Commonwealth; and the vertical height 80,000 persons for Commonwealth or 20,000 for States. The zero line for the States is the bottom line; for the Commonwealth it is the line marked "Commonwealth." The scale on the left above the Commonwealth zero line relates to the Commonwealth, and that on the right relates to the States.

Where the population falls suddenly the fall denotes the creation of a new colony, *e.g.*, New South Wales 1825, loses the whole population of Tasmania, then erected into a separate colony.

The curves are as follows:—Commonwealth, an unbroken line; New South Wales, — · — · —; Victoria, — - - - -; Queensland, — — - — — - —; South Australia, — - — - — - —; Western Australia, — — — — — — —; Tasmania, — — - — — -; the names on the curves also shew which State each represents.

The manner in which the population of the Commonwealth would have grown from 1860 to 1910 if, during that period, there had been in operation the rate of increase actually experienced the United States from 1790 to 1860, is shewn for purposes of comparison.

GRAPHS OF MALE AND FEMALE POPULATIONS, COMMONWEALTH OF AUSTRALIA, 1796-1910.

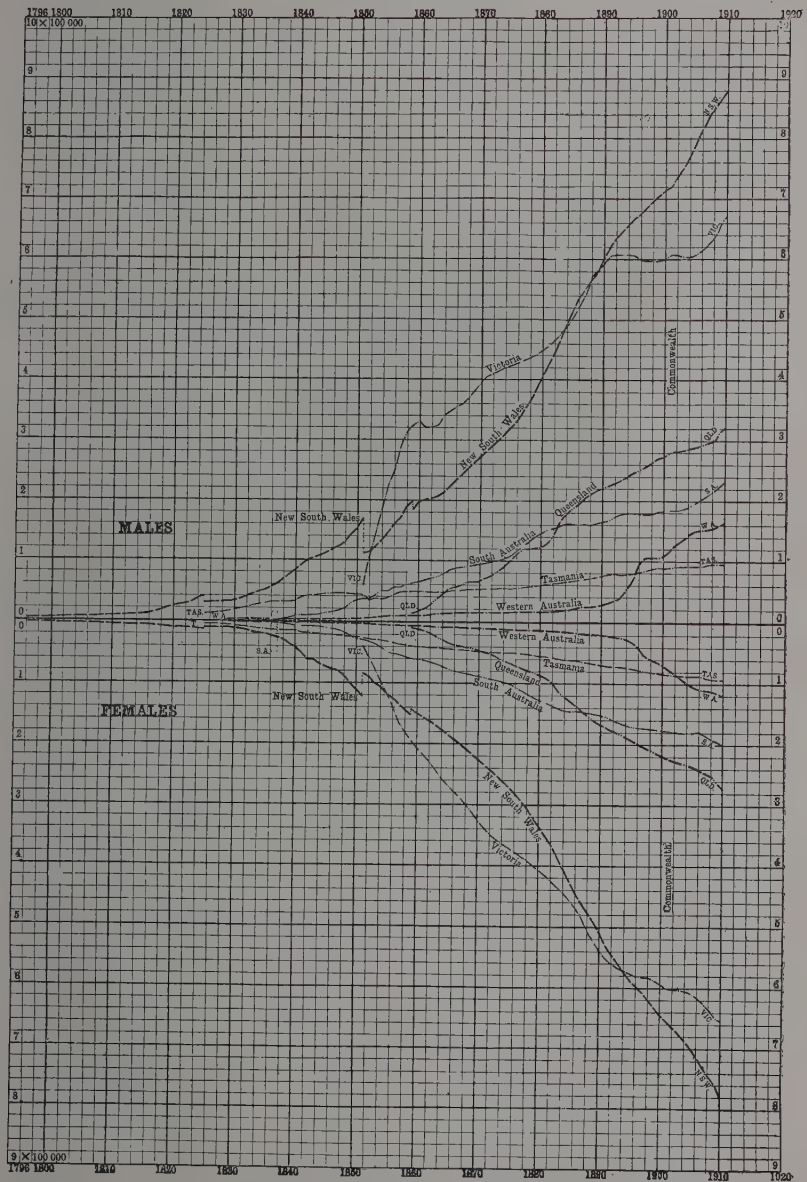


(See Tables pages 126 and 127.)

EXPLANATION OF GRAPHS.—The base of each small square represents two years' interval, and the vertical height 80,000 persons. The distances upward from the heavy zero line denote the number of males, and downward the number of females. From 1860 onward is shewn, for purposes of comparison, the manner in which the numbers of each sex in the Commonwealth would have grown from 1860 to 1908 (1910 for females), if, during that period, there had been in operation the rate of increase actually experienced in the United States from 1790 to 1860.

The asymmetry of the two graphs reveals the want of uniformity in the increase of the two sexes.

GRAPHS OF MALE AND FEMALE POPULATION OF THE STATES OF AUSTRALIA, 1796-1910.



(See Tables pages 125 to 127.)

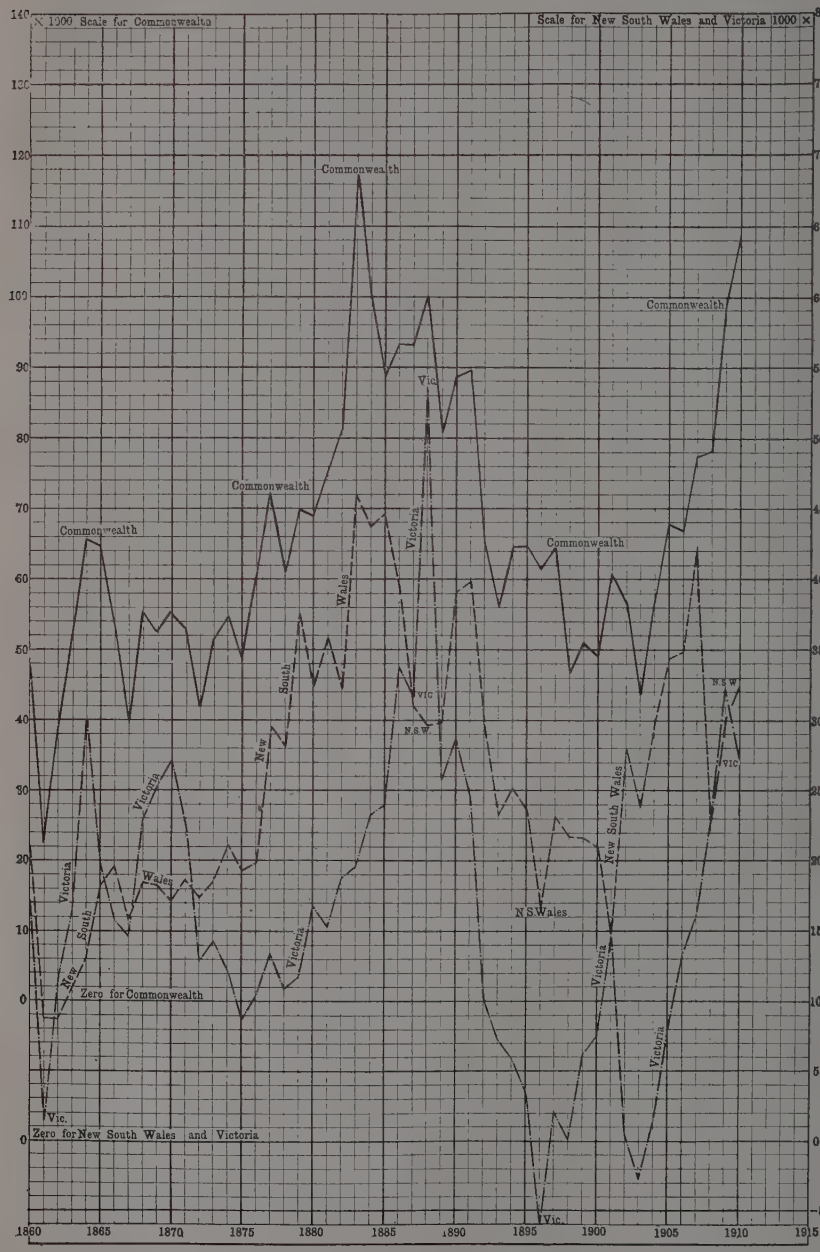
EXPLANATION OF GRAPHS.—The base of each small square represents two years' interval, and the vertical height 20,000 persons. The distances upward from the zero line represent the number of males, and downward the number of females.

The sudden falls denote the creation of new colonies.

The names on the curves denote the States to which they refer, and the curves are as follows:—New South Wales, — — —; Victoria, — - — - —; Queensland, — — - — — - —; South Australia, — - — - — - —; Western Australia, — — - — — - —; Tasmania, — - — - — - —.

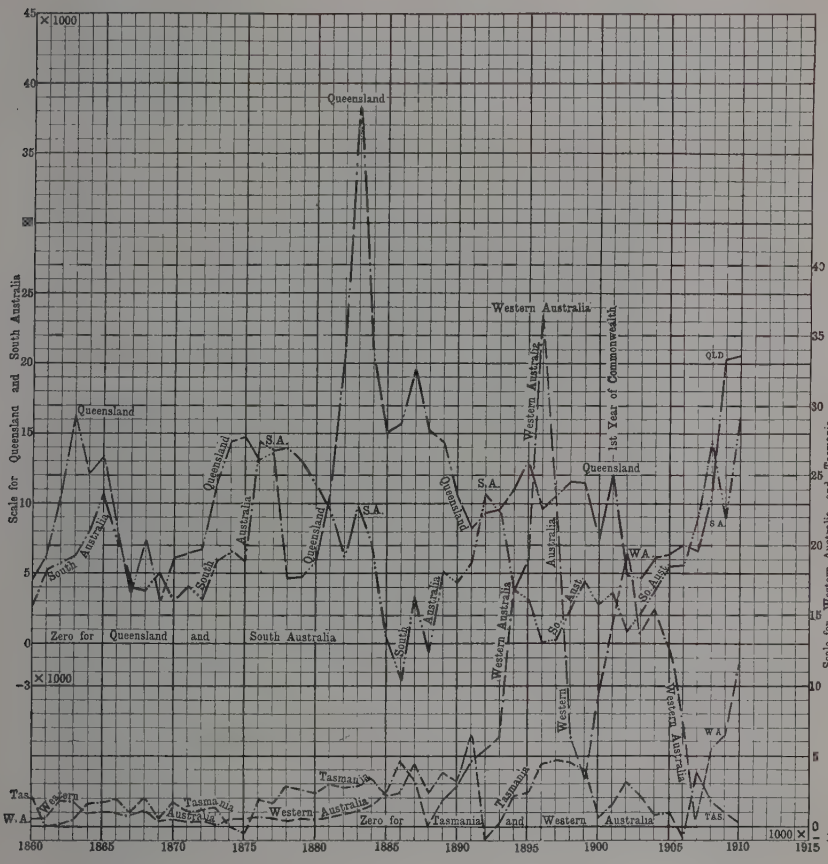
The asymmetry of the two series of graphs reveals the want of uniformity in the increase of the two sexes.

GRAPHS SHEWING NET INCREASE OF POPULATION OF THE COMMONWEALTH OF AUSTRALIA AND THE STATES OF NEW SOUTH WALES AND VICTORIA, 1860-1910.



(For explanation see foot of next page.)

GRAPHS SHEWING NET INCREASE OF POPULATION OF THE STATES OF QUEENSLAND, SOUTH AUSTRALIA, WESTERN AUSTRALIA, AND TASMANIA, 1860-1910.



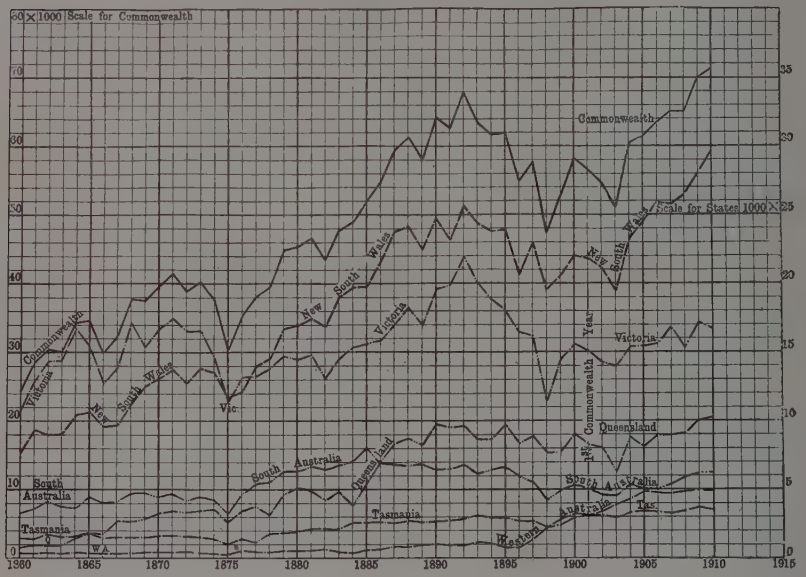
EXPLANATION OF GRAPHS SHEWING NET INCREASE.—The base of each small square represents an interval of a year for both States and Commonwealth; the vertical height represents 2000 for the Commonwealth and 1000 for the States. In the first graph two zero lines are taken (i.) for the Commonwealth and (ii.) for New South Wales and Victoria. The scale on the left relates to the Commonwealth and that on the right relates to New South Wales and Victoria. In the second graph two zero lines are taken (i.) for Queensland and South Australia, and (ii.) for Tasmania and Western Australia. The scale on the left relates to Queensland and South Australia, and that on the right relates to Tasmania and Western Australia.

NET DECREASES in population are shewn by carrying the graph in such cases below the zero line, the distance of the graph below the zero line indicating the extent of the decrease.

The lines used are as follows:—Commonwealth, an unbroken line; New South Wales, — — — — —; Victoria, — - — - — - —; Queensland, — — - — — - — —; South Australia, — - — - — - — - —; Western Australia, — — — - — — — — —; Tasmania, — — - — - — - —.

The names on the curves denote the States to which they refer.

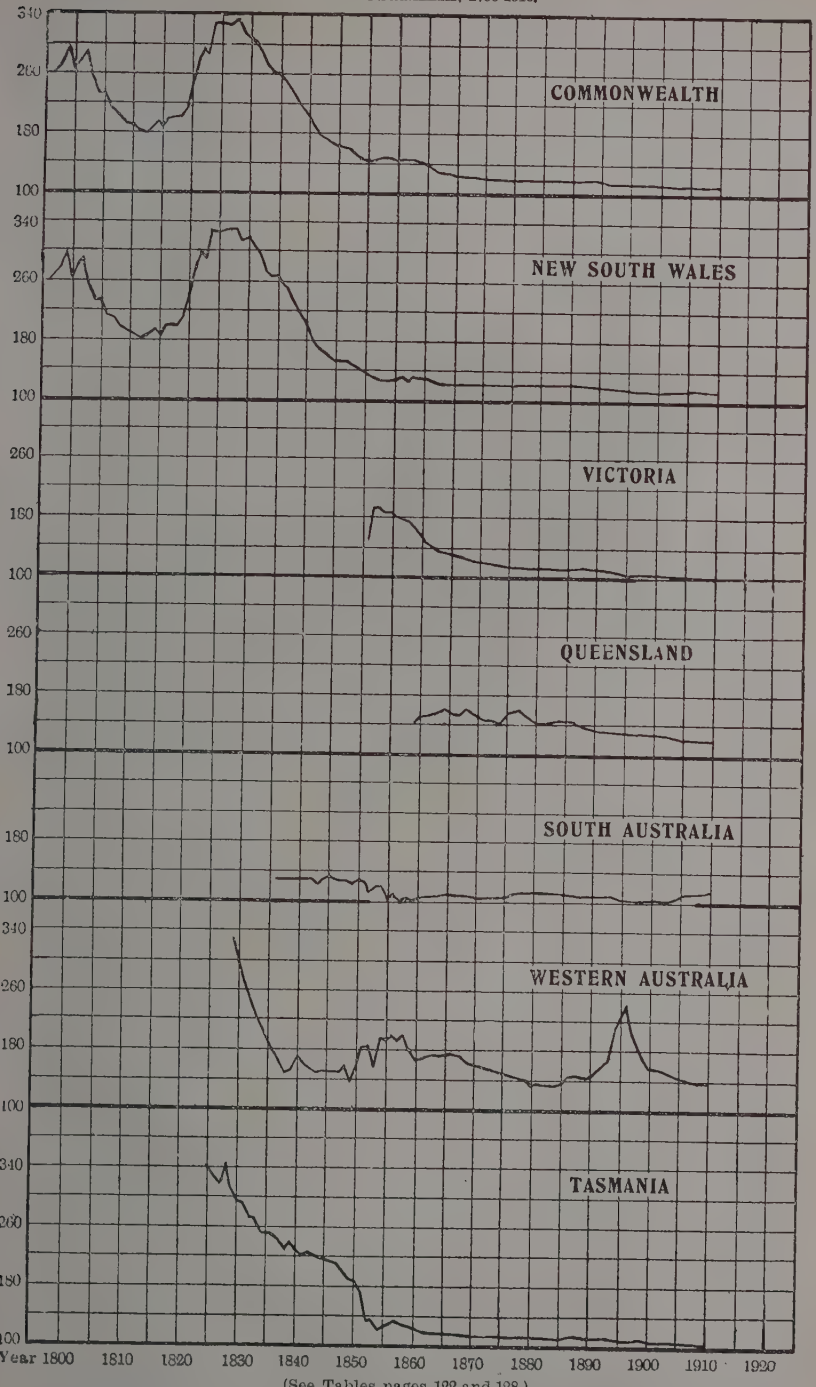
GRAPHS OF NATURAL INCREASE OF THE POPULATION OF THE COMMONWEALTH AND STATES OF AUSTRALIA, 1860-1910.



EXPLANATION OF GRAPHS.—The base of each small square represents one year for both States and Commonwealth, and the vertical height 1000 persons for the States and 2000 persons for the Commonwealth.

The distances upward from the zero line, marked 0 for both Commonwealth and States, denote the excess of births over deaths. The scale on the left relates to the Commonwealth, and that on the right to the States. The names shew the States to which the curves refer, they are as follows:—Commonwealth ——— ; New South Wales, — — —; Victoria, — - — - —; Queensland, — — - — — - —; South Australia, — - - — - - — - -; Western Australia, — — — - — — — —; Tasmania, — — - — — -.

GRAPHS SHEWING MASCULINITY OF THE COMMONWEALTH AND STATES OF AUSTRALIA, 1796-1910.



(See Tables pages 122 and 128.)

EXPLANATION OF GRAPHS.—The base of each small square represents an interval of five years and the vertical height an excess of forty per cent. of males over females. The basic line (shewn thickened) for Commonwealth and all the States is 100 per cent., equivalent to a numerical equality of the sexes.

DENSITY OF POPULATION THROUGHOUT THE COMMONWEALTH OF AUSTRALIA ACCORDING TO CENSUS OF 1901.



This map furnishes a graphic representation of the distribution of the population of the Commonwealth at the date of the last census, 1901. For this purpose the density of the population of variously constituted districts in each State has been computed, and the areas representing these have been shaded in accordance with the scale of density given at the foot of the map. The districts for which the results of the census were tabulated in the several States and which have, therefore, been used in the map are as follows:—New South Wales, counties; Victoria, counties; Queensland, census districts coincident with registration districts; South Australia, counties so far as the State has been divided into counties; Western Australia, magisterial districts; Tasmania electoral districts.

A map drawn on such a small scale must of course be considered as furnishing only a rough approximation as to the true distribution of the population, owing to the fact that a small densely-populated area may exist in certain cases within a comparatively large district, the balance of which is but sparsely populated. Thus, in such a case, owing to the density of the whole district being alone taken into account, the fact of a concentration of population within a small area is lost for purposes of representation. It is evident that the larger the district is for which the density has been calculated, the less will the map represent the true facts. Thus New South Wales, Victoria, and South Australia present a truer picture than the remaining three States. The densely-populated mining centres of the northern part of Queensland, the goldfields and pearling grounds of Western Australia, and the mines on the west coast of Tasmania are all contained in large districts which, apart from the centres mentioned, are very sparsely populated, and which, therefore, shew a darker shading on the map than they would present if the size of the map had allowed a division into smaller districts to be made.

The concentration of population about the capitals, referred to in the accompanying text, is obvious on reference to the above map.

6. **Graphs shewing Net Increase of Population** (pages 160 and 161).—The graphs disclose the fact that the most notable years of large net increases of population of the Commonwealth as a whole were 1864, 1877, 1883, 1888, and 1909. The highest increase was attained in 1883. The net increase for 1909 was higher than for any year since 1888. The years in which low net increases were noticeable were 1861, 1867, 1872, 1878, 1889, 1893, 1898, and 1903.

The graph for New South Wales indicates a high net increase of population between 1876 and 1893, advancing to a maximum in 1883, and then declining to 1901. From the latter year onwards to 1907 an advance in the net increase was in evidence, followed by a decline in 1908, and a recovery in 1909.

Some features of the graph shewing the Victorian net increase are the height attained in 1864, 1870, 1888, and 1901, the smallness of the increase for the years 1861 and 1875, and the decreases for 1896 and 1903.

For Queensland it will be seen that the years of high net increases were 1862, 1875, 1883, 1895, and 1901, while the years in which these were at very low level were 1869, 1878, 1891, and 1903.

In South Australia the net increases were exceptionally high in 1865, 1876, 1883, and 1892, and correspondingly low in 1870, 1886, and 1896.

In Western Australia the net increase graph indicates no very marked advance until about 1884, from which it rises somewhat rapidly to 1886, and then declines to 1888. This is followed by an exceedingly rapid rise to 1896, and a subsequent fall to 1899, succeeded by a further rise to 1902, and a fall thereafter to 1907, followed by a rise to 1909.

In the case of the Tasmanian graph, indications of a very varied net increase are in evidence, the principal high points being those for the years 1887, 1891, 1897, 1902, and 1907, while actual decreases were experienced in 1874, 1875, 1892, and 1906.

7. **Graphs shewing Masculinity of Population, Commonwealth and States** (page 163).—These graphs furnish information concerning the variations which have taken place in the relative numbers of males and females in the populations of the Commonwealth and the several States during the years 1796 to 1909, and incidentally serve to indicate special features of growth in the respective populations. In general it will be noted that in recent years there has been a marked tendency towards a masculinity of 100, that is, to a condition in which the numbers of males and females in the population were equal, but that with the exception of Victoria in 1904 and 1907 the masculinity has never fallen below 100. The early experience of the Commonwealth exhibits a fairly rapid decline in masculinity to 1812, followed by an even more rapid rise to 1828 and a subsequent fall with more gentle slope to 1850. From 1850 onwards the decline in masculinity has been fairly continuous though subject to fluctuations. It should be noted that the marked variations of the earlier as compared with the later years have been due to a considerable extent to the fact that, owing to the smallness of the population, any considerable influx of male immigrants had a marked effect in increasing the masculinity of the population, while an influx of female immigrants tended to considerably reduce it. Two points of special interest in the graphs of the separate States are the maxima attained in 1852 in Victoria and 1896 in Western Australia, as the result of extensive male immigration consequent on the gold discoveries in the respective States.

SECTION V.

VITAL STATISTICS.

§ 1. Births.

1. **Male and Female Births, 1901 to 1909.**—The total number of male and female births registered in the Commonwealth during the years 1901 to 1909 is as shewn in the two tables hereunder :—

TOTAL MALE BIRTHS, COMMONWEALTH, 1901 to 1909.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.[1]	W. Aust.	Tasmania.	C'wealth.
1901	19,149	15,876	7,281	4,687	2,946	2,570	52,509
1902	19,322	15,583	7,279	4,587	3,241	2,604	52,616
1903	18,377	15,115	6,427	4,484	3,433	2,570	50,406
1904	19,857	15,313	7,134	4,686	3,666	2,702	53,358
1905	20,206	15,523	6,978	4,514	3,862	2,812	53,895
1906	21,066	15,716	7,280	4,617	4,043	2,792	55,514
1907	21,604	15,986	7,451	4,689	3,962	2,797	56,489
1908	21,605	16,071	7,677	4,949	3,993	2,818	57,113
1909	22,464	16,096	7,954	5,235	3,884	2,849	58,482

1. Including Northern Territory.

TOTAL FEMALE BIRTHS, COMMONWEALTH, 1901 to 1909.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.[1]	W. Aust.	Tasmania.	C'wealth.
1901	18,726	15,132	7,022	4,424	2,772	2,360	50,436
1902	18,513	14,878	6,937	4,360	2,991	2,481	50,160
1903	17,589	14,454	6,194	4,024	3,266	2,510	48,037
1904	18,810	14,450	6,948	4,447	3,510	2,590	50,755
1905	19,295	14,584	6,648	4,354	3,720	2,445	51,046
1906	19,882	15,128	6,739	4,329	3,757	2,541	52,376
1907	20,597	15,379	7,089	4,549	3,750	2,494	53,858
1908	20,853	15,026	7,153	4,841	3,762	2,797	54,432
1909	21,318	15,448	7,598	4,856	3,718	2,651	55,589

1. Including Northern Territory.

2. **Total Births, 1901 to 1909.**—While the total number of births for the Commonwealth was higher in 1909 than in any of the preceding eight years, the following table of particulars discloses also the fact that apart from New South Wales and Western Australia, the excess of births in 1909 over those in 1901 was very small :—

TOTAL BIRTHS, COMMONWEALTH, 1901 to 1909.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.[1]	W. Aust.	Tas.	C'wealth.
1901	37,875	31,008	14,303	9,111	5,718	4,930	102,945
1902	37,835	30,461	14,216	8,947	6,232	5,085	102,776
1903	35,966	29,569	12,621	8,508	6,699	5,080	98,443
1904	38,667	29,763	14,082	9,133	7,176	5,292	104,113
1905	39,501	30,107	13,626	8,868	7,582	5,257	104,941
1906	40,948	30,844	14,019	8,946	7,800	5,333	107,890
1907	42,201	31,365	14,540	9,238	7,712	5,291	110,347
1908	42,458	31,097	14,830	9,790	7,755	5,615	111,545
1909	43,782	31,544	15,552	10.091	7.602	5.500	114,071

1. Including Northern Territory.

3. **Birth Rates, 1901 to 1909.**—(i.) *Crude Birth Rate.* The birth rate for the whole Commonwealth was lower in 1909 than in 1901, and Tasmania is the only State in which a slight increase in the rate took place, as will be seen from the following table, which gives also the number of persons per square mile in each State :—

CRUDE BIRTH RATE,[1] COMMONWEALTH, 1901 to 1909.

Year.	N.S.W.	Vic.	Qld.	S.A.[3]	W.A.	Tas.	Cwlth.
1901	27.78	25.75	28.53	25.11	30.34	28.60	27.14
1902	27.20	25.16	27.89	24.54	30.27	29.23	26.66
1903	25.41	24.46	24.62	23.25	30.26	28.62	25.23
1904	26.81	24.65	27.13	24.71	30.33	29.60	26.33
1905	26.79	24.83	25.92	23.67	30.29	29.33	26.12
1906	27.12	25.20	26.31	23.55	30.01	29.82	26.41
1907	27.22	25.32	26.98	23.96	29.40	29.50	26.55
1908	26.86	24.71	26.99	24.59	29.26	30.90	26.35
1909	27.26	24.55	27.52	24.57	28.06	29.86	26.40
Density[2] (No. per square mile) ...	5.22	14.83	0.85	0.46	0.28	7.13	1.47

1. Number of Births per 1000 of the mean annual population.
2. On 31st December, 1909.
3. Including Northern Territory.

The population density of each State and of the Commonwealth has been given for the purpose of considering the influence, if any, of concentration of population on birth-rate, in connection with the disparities of the rate in different parts of Australia.

(ii.) *Objections to Crude Birth Rate.* The figures just given represent the "crude birth rate," *i.e.*, the number of births per thousand of mean annual population. The number of births per thousand of the female population of child-bearing ages, *i.e.*, from 15 to 45, would furnish a more significant rate. To calculate this, would, of course, involve assumptions concerning the variations of the age and sex constitution of the population since the last Census. Calculations of this nature at the present time would be subject to so large an uncertainty that it has been decided to defer computing the rates of fecundity and fertility on other and better bases until after the next Census. The calculation has, however, been made for the last three Census periods, and covers in each case the Census year together with the year immediately preceding and the year immediately following. The following results have been obtained:—Total births per 1000 women (married and unmarried) of ages 15 to 45 :—Years 1880-82, 169.69 ; years 1890-92, 158.81 ; years 1900-02, 117.26. Nuptial births per 1000 married women of ages 15 to 45 :—Years 1880-82, 320.96 ; 1890-92, 332.03 ; years 1900-02, 235.84.

4. **Birth Rates of Various Countries.**—A comparison with other countries shews that the Australian States occupy a very low position, which is, however, fortunately counterbalanced by a still lower position in regard to their death rates, as will be seen from the table on page 187.

CRUDE BIRTH RATE[1] OF VARIOUS COUNTRIES.

Country.	Year.	Rate.	Country.	Year.	Rate.
Russia, European ...	1903	48.1	Western Australia ...	1909	28.1
Bulgaria	1907	43.6	Queensland	1909	27.5
Rumania	1908	40.8	New South Wales ...	1909	27.3
Ceylon	1908	40.1	New Zealand ...	1909	27.3
Chile	1908	39.3	Scotland	1908	27.2
Jamaica	1908	37.6	Switzerland	1907	26.8
Servia	1908	36.8	England and Wales ...	1908	26.5
Hungary	1908	36.3	Commonwealth ...	1909	26.4
Austria	1907	33.8	United Kingdom ...	1908	26.3
Italy	1908	33.4	Norway	1908	26.2
Spain	1908	33.2	Sweden	1908	25.7
Japan	1907	33.0	Belgium	1907	25.3
Prussia	1908	32.8	South Australia ...	1909	24.6
German Empire ...	1907	32.3	Victoria	1909	24.6
Finland	1907	31.3	Ireland	1908	23.3
Tasmania	1909	29.9	Canada (Ontario) ...	1906	23.3
Netherlands	1908	29.7	France	1908	20.2
Denmark	1908	28.3			

1. Number of births per 1000 of the mean population.

5. **Masculinity at Birth.**—The masculinity of births, *i.e.*, the number of males per 100 females, registered during the last nine years in the several States of the Commonwealth has varied from 100.75 in Tasmania in 1908 to 115.01 in Tasmania in 1905. The following table, which gives the values for the States and Commonwealth for 1901 to 1909, shews the remarkable fact that for the Commonwealth there was a steady increase of masculinity from 1901 to 1906, with a sharp decrease in 1907 and a further increase in 1908 and 1909:—

MASCULINITY[1] OF BIRTHS REGISTERED, COMMONWEALTH, 1901 to 1909.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
1901 ...	102.26	104.92	103.69	105.94	106.28	108.90	104.11
1902 ...	104.37	104.74	104.93	105.21	108.36	104.96	104.90
1903 ...	104.48	104.57	103.76	111.43	105.11	102.39	104.93
1904 ...	105.57	105.97	102.68	105.37	104.44	104.32	105.13
1905 ...	104.72	106.44	104.96	103.67	103.82	115.01	105.58
1906 ...	105.96	103.89	108.03	106.65	107.61	109.88	105.99
1907 ...	104.89	103.95	105.11	103.08	105.65	112.15	104.89
1908 ...	103.61	106.95	107.33	102.23	106.14	100.75	104.93
1909 ...	105.38	104.19	104.69	107.80	104.46	107.47	105.20

1. Number of males to each 100 females.

There is ordinarily a very small difference between the masculinity of nuptial and ex-nuptial births. Thus, according to Bodio, whose figures are quoted in the following

table, for the period about 1887-1891, the masculinity ranged from 108.3 to 103.6, and from 107.9 to 101.6 for total and ex-nuptial births respectively.

MASCULINITY OF BIRTHS IN VARIOUS COUNTRIES.

Country.	Masculinity of Births.[1]		Country.	Masculinity of Births.[1]	
	All Live Births.	Ex-nuptial Live Births.		All Live Births.	Ex-nuptial Live Births.
Spain	108.3	107.9	German Empire ...	105.2	104.7
Rumania	107.7	103.4	Finland	105.0	105.2
Portugal	107.5	106.4	Hungary	105.0	102.9
Austria	105.8	105.5	Sweden	105.0	104.3
Italy	105.8	104.4	Denmark	104.8	105.0
Norway	105.8	105.9	Servia	104.7	103.5
Ireland	105.5	104.8	France	104.6	102.9
Netherlands ...	105.5	104.7	Belgium	104.5	102.2
Scotland	105.5	105.9	Switzerland ...	104.5	101.6
Russia, European ...	105.4	104.5	England	103.6	104.4

1. Number of males to each 100 females.

The masculinity of ex-nuptial births in the Commonwealth was as follows:—

MASCULINITY[1] OF EX-NUPTIAL BIRTHS REGISTERED, COMMONWEALTH, 1901 TO 1909.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
1901 ...	108.46	102.22	107.84	100.56	100.00	102.07	105.50
1902 ...	103.67	106.78	100.23	106.91	111.11	93.17	103.96
1903 ...	97.79	114.83	95.22	100.00	114.29	122.66	104.10
1904 ...	100.80	108.68	95.77	83.50	107.28	93.71	100.98
1905 ...	102.50	102.52	105.63	96.94	98.75	102.80	102.44
1906 ...	103.10	102.23	104.17	116.97	118.13	124.92	105.44
1907 ...	104.91	105.59	100.90	113.56	115.94	100.00	105.11
1908 ...	108.60	105.38	96.83	97.30	89.33	108.51	104.00
1909 ...	105.46	102.16	103.90	104.81	129.14	129.01	106.25

1. Number of males to each 100 females.

It is curious to note that while, so far as the total births are concerned, there has always been an excess of male births over female births, this has not been the case in regard to ex-nuptial births, where in South Australia in 1904 the masculinity was only 83.50. On the other hand it rose as high as 129.14 in Western Australia in 1909. Little weight, however, can be attached to these results on account of the small totals on which they are based.

6. **Ex-nuptiality of Births.**—The total ex-nuptial births fell from 1901 to 1903, then rose rapidly to 1908 and remained almost stationary till 1909. See the table on the following page.

It is, of course, possible that the number of ex-nuptial births is somewhat understated, owing to diffidence in proclaiming the fact of ex-nuptiality, and it is not unlikely that the majority of unregistered births are ex-nuptial.

TOTAL EX-NUPTIAL BIRTHS REGISTERED IN THE COMMONWEALTH, 1901 TO 1909.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
1901	2,712	1,729	848	361	222	293	6,165
1902	2,497	1,677	859	389	247	311	5,980
1903	2,413	1,695	857	354	315	285	5,919
1904	2,755	1,707	971	367	313	308	6,421
1905	2,912	1,689	950	386	318	290	6,545
1906	2,882	1,721	1,076	358	373	308	6,718
1907	2,920	1,764	1,117	378	298	306	6,783
1908	2,887	1,793	1,118	438	337	294	6,867
1909	2,821	1,870	1,097	426	346	300	6,860

(i). *Rate of Ex-nuptiality, 1901 to 1909.* The rate of ex-nuptiality, *i.e.*, the percentage of ex-nuptial to total births, shews on the whole a slight increase from 1901 to 1905, with a decrease during the last four years, as the subjoined table shews :—

PERCENTAGE OF EX-NUPTIAL ON TOTAL BIRTHS, COMMONWEALTH, 1901 TO 1909.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth
	%	%	%	%	%	%	%
1901	7.16	5.58	5.93	3.96	3.88	5.94	5.99
1902	6.60	5.51	6.04	4.35	3.96	6.12	5.82
1903	6.71	5.73	6.79	4.16	4.70	5.61	6.01
1904	7.12	5.74	6.90	4.02	4.36	5.82	6.17
1905	7.37	5.61	6.97	4.35	4.19	5.52	6.24
1906	7.04	5.58	7.68	4.00	4.78	5.78	6.23
1907	6.92	5.62	7.68	4.09	3.86	5.73	6.15
1908	6.80	5.77	7.54	4.47	4.35	5.24	6.16
1909	6.44	5.94	7.05	4.22	3.95	5.45	6.01

A comparison of greater significance would be obtained by calculating the number of ex-nuptial births per thousand of the single and widowed female population between the ages of 15 and 45, but until the next Census has once more shewn the composition of the population, such a calculation would be liable to considerable error, and will, therefore, be deferred. The calculation has, however, been made for the three last Census periods, and covers in each case the Census year, together with the year immediately preceding and the year immediately following. The number of ex-nuptial births per 1000 unmarried women of ages 15 to 45 has been found to be as follows:—Years 1880-82, 14.49; years 1890-92, 15.93; years 1900-02, 13.30.

(ii.) *Causes of Increase.* Since the rate of ex-nuptiality might appear to increase by the mere decrease in the general birth rate, the following table has been prepared :—

CRUDE EX-NUPTIAL, NUPTIAL, AND TOTAL BIRTH RATES,[1] COMMONWEALTH, 1901 to 1909.

Births.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.
Ex-nuptial ...	1.62	1.56	1.52	1.62	1.63	1.65	1.63	1.62	1.59
Nuptial ...	25.52	25.10	23.71	24.71	24.50	24.76	24.92	24.73	24.81
Total ...	27.14	26.66	25.23	26.33	26.13	26.41	26.55	26.35	26.40

1. Number of births per 1000 of mean population.

(iii). *Ex-nuptiality—Rates of Various Countries.* The rate for the Commonwealth is higher than that for England and Wales, slightly lower than that for Scotland, and considerably below the rates for many of the countries for which returns are available, as the table hereunder shews. The rates shewn below refer to three triennial periods, 1880-2, 1890-2, and 1900-2, and are given per thousand of the unmarried and widowed female population:—

EX-NUPTIAL BIRTHS PER THOUSAND OF UNMARRIED AND WIDOWED FEMALE POPULATION IN VARIOUS COUNTRIES.

Country.	Rate.			Country.	Rate.		
	1880-2.	1890-2.	1900-2.		1880-2.	1890-2.	1900-2.
	%	%	%		%	%	%
Ireland	4.4	3.9	3.8	Belgium	20.0	20.6	17.8
Netherlands ...	9.7	9.0	6.8	France	17.6	17.7	19.1
England and Wales ...	14.1	10.5	8.5	Italy	25.4	...	19.4
New Zealand ...	13.4	9.0	8.9	Russia	25.8	25.1	23.7
Switzerland	10.8	10.0	9.8	Denmark	26.9	24.5	24.2
Commonwealth ...	14.5	15.9	13.3	Sweden	22.6	22.9	24.3
Scotland	21.4	17.1	13.4	German Empire ...	29.6	28.7	27.4
Spain	16.0	17.5	15.5	Austria	43.4	42.7	40.1
Norway	19.7	16.9	17.2				

It may be added that the general circumstances in Australia with regard to opportunity for marriage are probably relatively easy as compared with those in older established countries.

7. **Multiple Births.**—Among the total number of 114,071 births registered in the Commonwealth in 1909 there were 111,779 single births, 2251 twins, and 41 triplets. The number of cases of twins was 1128, five children being still-born, and the number of cases of triplets 14, one child being still-born. The total number of mothers was, therefore, 112,921, the proportion of mothers of twins being one in every 100, and of mothers of triplets one in every 8066 of total mothers. The proportion of multiple births is a fairly constant one. In 1907 they numbered 1043 out of a total of 109,306, or one in 105; in 1908, 1065, or one in 104; and in 1909, 1142, or one in 99. The number of cases of triplets is so small that a slight alteration in the total will completely change the proportion. Thus, there were 14 cases in 1907, or one in 7872 of total mothers, as compared with one in 18,415 in 1908, and one in 8066 in 1909.

8. **Ages of Parents.**—The relative ages of the parents of children registered in 1909 have been tabulated, twins and triplets being distinguished from single births, and are shewn for single ages and for every State in "Bulletin of Population and Vital Statistics, No. 20; Vital Statistics of the Commonwealth for the Year 1909." In the present work the exigencies of space allow only the insertion of corresponding tables shewing the relative ages of parents in groups of five years. It will be seen from the tables that the largest number both of single and of twin births occurred where the ages of both father and mother were between 25 and 29. The largest number of mothers of single children was found at ages 25 to 29, and that of mothers of twins at ages 30 to 34.

(a) AGES OF PARENTS IN CASES OF SINGLE BIRTHS, COMMONWEALTH, 1909.

Age.	Total Fathers.	Ages of Mothers.							
		Under 15.	15 to 19.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.	45 and Upwds.	Not Stated.
Ages of Fathers.										
Under 20 ...	323	1	222	89	10	1	...	...	...	...
20 to 24 ...	10,163	2	1,977	6,641	1,373	142	25	2	...	1
25 to 29 ...	24,879	...	1,064	10,372	11,191	1,967	246	27	2	10
30 to 34 ...	24,607	...	305	4,389	10,311	8,169	1,308	114	1	10
35 to 39 ...	21,024	...	118	1,616	5,149	7,686	5,794	638	17	6
40 to 44 ...	13,796	...	32	540	1,673	3,690	5,351	2,444	62	4
45 to 49 ...	7,098	...	15	159	576	1,250	2,585	2,196	315	2
50 to 54 ...	2,248	...	2	55	160	375	656	809	191	...
55 to 59 ...	568	...	2	13	47	95	173	176	62	...
60 to 64 ...	179	...	2	6	14	30	59	52	16	...
65 & upwards	108	...	...	4	14	19	28	38	5	...
Not stated ...	30	...	1	7	6	2	5	4	...	5
Mothers of nuptial children ...	105,023	3	3,740	23,891	30,524	23,426	16,230	6,500	671	38
Mothers of ex-nuptial children ...	6,756	11	1,768	2,745	1,140	589	347	124	17	15
Total mothers	111,779	14	5,508	26,636	31,664	24,015	16,577	6,624	688	53

(b) AGES OF PARENTS OF TWINS, COMMONWEALTH, 1909.

Age.	Total Fathers.	Ages of Mothers.							
		Under 20.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.	45 & upwards.	Not Stated
Ages of Fathers.									
20 to 24	66	10	44	8	3	1	...	...	...
25 to 29	217	4	69	113	22	6	2	...	1
30 to 34	269	...	40	94	111	20	4	...	...
35 to 39	225	...	1	48	94	76	6	...	...
40 to 44	163	...	3	11	56	66	27	...	...
45 to 49	105	...	2	6	16	48	24	6	1
50 to 54	20	...	...	1	5	11	3	...	...
55 to 59	6	...	...	...	1	1	4	...	...
60 to 64	3	...	...	2	...	...	1	...	...
65 and upwards ...	2	...	...	1	1	...	...	...	...
Mothers of nuptial twins	1,076	14	159	284	311	229	71	6	2
Mothers of ex-nuptial ,,	52	5	20	10	7	8	2	...	...
Total mothers ...	1,128	19	179	294	318	237	73	6	2

(c) AGES OF PARENTS OF TRIPLETS, COMMONWEALTH, 1909.

Age.	Total Fathers.	Ages of Mothers.			
		20 to 24.	25 to 29.	30 to 34.	35 to 39.
Ages of Fathers.					
20 to 24	2	2	...	...	...
25 to 29	1	...	1	...	...
30 to 34	5	...	...	2	3
35 to 39	1	...	...	...	1
40 to 44	3	...	...	2	1
45 to 49	1	...	...	...	1
50 to 54	1	...	...	...	1
Mothers of nuptial triplets	14	2	1	4	7
Mothers of ex-nuptial triplets	...	...	...	...	...
Total mothers	14	2	1	4	7

9. **Birthplaces of Parents.**—The relative birthplaces of the parents of children whose births were registered during the year 1909 will be found tabulated in the Bulletin before-mentioned. A summary of the results of the tabulation is here given:—

BIRTHPLACES OF PARENTS OF CHILDREN, COMMONWEALTH, 1909.

Birthplaces.	Fathers.			Mothers of Nuptial Children.			Mothers of Ex-nuptial Children.		
	Single Births.	Twins.	Triplets.	Single Births.	Twins.	Triplets.	Single Births.	Twins.	Triplets.
New South Wales ...	31,828	311	3	34,996	352	4	2,598	18	...
Victoria	29,223	310	6	29,966	330	5	1,876	17	...
Queensland ...	8,150	69	1	10,423	90	1	919	9	...
South Australia ...	11,106	117	1	11,622	130	1	484	3	...
Western Australia ...	1,125	14	...	1,620	9	...	114	1	...
Tasmania	4,822	40	...	5,185	39	...	335	1	...
New Zealand ...	1,177	13	...	1,087	12	...	64	...	...
Austria-Hungary ...	74	1	...	31	1	...	...	...	...
Belgium	6	...	...	4	...	...	...	...	...
Bulgaria	1	...	...	...	...	...	...	...	...
Channel Islands ...	29	1	...	16	...	...	...	...	...
Denmark	196	2	...	78	...	...	2	...	...
England	9,185	110	2	5,406	67	1	189	1	...
Finland	32	...	...	9	...	...	...	...	...
France	60	...	...	25	1	...	1	...	...
Germany	1,068	21	...	505	4	...	15	...	...
Gibraltar	...	...	...	2	...	...	...	...	...
Greece	26	2	...	9	...	...	...	...	...
Iceland	1	...	...	1	...	...	...	...	...
Ireland	2,502	20	...	1,632	20	...	49	1	...
Isle of Man ...	14	...	...	10	...	...	...	...	...
Italy	259	3	1	153	1	1	3	...	...
Malta	6	...	...	3	...	...	...	...	...
Netherlands ...	12	...	...	3	...	...	1	...	...
Norway	111	3	...	21	...	...	2	...	...
Portugal	7	...	...	1	...	...	...	...	...
Rumania	14	...	...	8	...	...	...	...	...
Russia	89	...	...	50	...	...	...	...	...
Scotland	2,141	20	...	1,215	12	1	40	1	...
Spain	12	...	...	5	...	...	...	...	...
Sweden	231	1	...	19	...	...	1	...	...
Switzerland ...	52	...	...	22	...	...	...	...	...
Turkey	20	...	...	5	1	...	...	...	...
Wales	294	4	...	219	3	...	4	...	...
Canada	79	3	...	34	1	...	2	...	...
Mexico	1	...	...	1	...	...	...	...	...
Newfoundland ...	1	...	...	...	...	...	...	...	...
United States ...	215	2	...	104	1	...	7	...	...
Guatemala... ...	1	...	...	...	...	...	...	...	...
Bermudas	5	...	...	1	...	...	...	...	...
West Indies ...	15	...	...	7	...	...	1	...	...
Argentine Republic ...	1	...	...	1	...	...	...	...	...
Brazil	...	...	...	2	...	...	...	...	...
Chile	2	...	...	...	...	...	...	...	...
Falkland Islands ...	1	...	...	...	...	...	...	...	...
S.America,so described	5	...	...	3	...	...	...	...	...
Uruguay	1	...	...	...	...	...	...	...	...

BIRTHPLACES OF PARENTS OF CHILDREN—Continued.

Birthplace.	Fathers.			Mothers of Nuptial Children.			Mothers of Ex-nuptial Children.		
	Single Births.	Twins.	Triplets.	Single Births.	Twins.	Triplets.	Single Births.	Twins.	Triplets.
Aden	1	...	...	...	...	...	...	...	...
Afghanistan ...	4	...	...	...	...	...	...	...	...
Arabia	2	...	...	...	...	...	...	...	...
Armenia	1	...	...	...	...	...	...	...	...
Asia Minor ...	1	...	...	...	...	...	...	...	...
Burmah	2	...	...	1	...	...	...	...	...
Ceylon	16	...	...	7	...	...	...	...	...
China	167	2	...	63	...	...	3	...	...
Cyprus	3	...	...	...	...	...	...	...	...
Dutch East Indies ...	4	...	...	2	...	...	...	...	...
India	151	2	...	70	1	...	6	...	...
Japan	14	...	...	15	...	...	1	...	...
Malay Straits ...	4	...	...	1	...	...	...	...	...
Persia	1	...	...	...	...	...	...	...	...
Philippine Islands ...	12	...	...	...	...	...	...	...	...
Siam	2	...	...	...	...	...	...	...	...
Straits Settlements ...	6	...	...	2	...	...	1	...	...
Syria	96	2	...	81	...	...	...	...	...
Abyssinia	1	...	...	...	...	...	...	...	...
Africa, so described ...	4	...	...	...	...	...	...	...	...
Algeria	2	...	...	1	...	...	...	...	...
Ascension Island ...	...	...	...	1	...	...	...	...	...
Azores	...	...	...	1	...	...	...	...	...
Cape of Good Hope ...	8	...	...	16	...	...	...	...	...
Cape Verde Islands ...	1	...	...	...	...	...	...	...	...
E. Africa, so described	...	...	...	1	...	...	...	...	...
Egypt	2	...	...	7	...	...	...	...	...
Madeira	2	...	...	...	...	...	...	...	...
Mauritius	26	...	...	16	...	...	...	...	...
Natal	...	...	...	2	...	...	...	...	...
St. Helena	...	...	...	...	...	...	1	...	...
Seychelles Islands ...	1	...	...	1	...	...	...	...	...
S. Africa, so described	51	2	...	71	...	...	4	...	...
Fiji	25	...	...	23	1	...	2	...	...
Friendly Islands ...	3	...	...	2	...	...	...	...	...
Hawaii	1	...	...	...	...	...	...	...	...
Neu Pommern ...	1	...	...	...	...	...	...	...	...
New Caledonia ...	7	...	...	14	...	...	1	...	...
New Guinea ...	...	...	...	1	...	...	...	...	...
New Hebrides ...	6	...	...	...	...	...	...	...	...
Norfolk Island ...	1	...	...	...	...	...	1	...	...
Samoa	3	...	...	1	...	...	...	...	...
South Sea Islands, so described ...	20	...	...	4	...	...	2	...	...
Born at sea ...	144	1	...	81	...	...	10	...	...
Birthplace not stated	27	...	...	34	...	...	17	...	...
Total	105,023	1,076	14	105,023	1,076	14	6,756	52	...

10. **Occupations of Fathers.**—A summary of the occupations of the fathers of all nuptial children, whose births were registered in 1909, will be found in the following table. The figures include all the States of the Commonwealth :—

OCCUPATIONS OF FATHERS OF ALL NUPTIAL CHILDREN, COMMONWEALTH, 1909.

Occupations.	Number of Fathers.
CLASS I.—PROFESSIONAL.	
General Government	564
Local Government	75
Defence	123
Law and Order	1,131
Religion	326
Charities	2
Health	788
Literature	164
Science	108
Engineering, Architecture, and Surveying	455
Education	796
Fine Arts	139
Music	121
Amusements	235
Total Professional	5,027
CLASS II.—DOMESTIC.	
Hotelkeepers and Assistants ...	890
Others engaged in providing board and lodging...	169
House Servants	183
Coachmen and Grooms... ...	317
Hairdressers	565
Laundrymen	61
Others engaged domestic occupat'ns	176
Total Domestic	2,361
CLASS III.—COMMERCIAL.	
Banking and Finance	415
Insurance and Valuation ...	419
Land and Household Property ...	118
Property Rights not otherwise clsd.	4
Books, Publications, Advertising	118
Musical Instruments	20
Prints and Pictures	7
Ornaments and Small Wares ...	10
Watches, Clocks, Jewellery ...	8
Surgical Instruments	1
Arms and Ammunition... ...	1
Machinery	48
Carriages and Vehicles	31
Harness and Saddlery	4
Ships, Boats, Marine Stores ...	9
Building Materials	15
Furniture	51
Chemicals	6
Paper and Stationery	62
Textile Fabrics	815
Dress	142
Fibrous Materials	4
Animal Food	2,080
Vegetable Food	631
Groceries, Drinks, Narcotics, and Stimulants...	1,197
Living Animals	312
Manures	1
Leather	29
Wool and Tallow	79
Hay, Corn, etc.	232
Other Vegetable Matter ...	121
Wood and Coal	224
Glass and Earthenware ...	25
Gold, Silver, and Precious Stones	12
Ironmongery	235
Merchants, etc.	273
Shopkeepers and Assistants ...	1,065
Dealers and Hawkers	406
Agents and Brokers	482
Clerks, Bookkeepers, etc. ...	2,537
Commercial Travellers, Salesmen	1,186
Others engaged in Commercial Pursuits	673
Speculators on Chance Events ...	36
Storage	7
Total Commercial	14,151
CLASS IV.—TRANSPORT AND COMMUNICATION.	
Railway Traffic	3,111
Tramway Traffic	849
Road Traffic	3,969
Sea and River Traffic	1,581
Postal Service	437
Telegraph and Telephone Service	347
Messengers, etc.	15
Total Transport & Communication	10,309
CLASS V.—INDUSTRIAL.	
Books and Publications ...	824
Musical Instruments	67
Prints and Pictures	76
Ornaments and Small Wares ...	89
Equipment for Sports and Games	4
Designs, Medals, Type ...	30
Watches and Clocks	128
Surgical Instruments	3
Arms and Ammunition ...	6
Engines and Machinery ..	951
Carriages and Vehicles ...	760
Harness and Saddlery ...	479
Ships and Boats	123
Furniture	461
Building Materials	586
Chemicals	41
Textile Fabrics	45
Dress	1,899
Fibrous Materials	40
Animal Food	347
Vegetable Food	1,530
Groceries, Drinks, Narcotics, and Stimulants	470
Animal Matter	472
Workers in wood not elsewhere clsd.	60
Fodder	7
Paper	12
Stone, Clay, Glass	565

OCCUPATIONS OF FATHERS OF ALL NUPTIAL CHILDREN—Continued.

Occupations.	Number of Fathers.	Occupations.	Number of Fathers.
Jewellery and Precious Stones ...	193	CLASS VI.—AGRICULTURAL, PASTORAL, MINING, ETC.	
Metals, other than Gold & Silver	3,027	Agricultural	18,375
Gas, Electric Lighting ...	354	Pastoral	3,544
Buildings—		Dairying	1,236
Builders	374	Fisheries, Capture and Destruction of Wild Animals, or acquisition of Products yielded thereby	326
Stonemasons	256	Forestry	623
Bricklayers	454	Water Conservation and Supply	96
Carpenters	2,427	Mines and Quarries	8,178
Slaters	13		
Plasterers	229	Total Primary Producers ...	32,378
Painters	1,146		
Plumbers	676	CLASS VII.—INDEFINITE.	
Others	92	Independent Means	123
Roads, Railways, Earthworks ...	257	Students	5
Disposal of the Dead	43	Dependent on State	1
Disposal of Refuse	178	Occupation not stated	38
Other Industrial Workers—			
Manufacturers	270	Total Indefinite	167
Engineers, Firemen	2,541		
Contractors	1,119		
Labourers	17,813		
Others	183		
Total Industrial	41,720	Total all Occupations ...	106,113

11. **Mothers' Age, Duration of Marriage, and Issue.**—A tabulation has been made shewing, in age-groups, the duration of marriage and issue of mothers. The total number of nuptial confinements in 1909 was 106,113, viz., 105,023 single births, 1076 cases of twins, and 14 cases of triplets. From this number 1214 mothers must be deducted, viz., 1026 in Tasmania and 188 in other States, in whose case the necessary particulars either as to date of marriage or as to previous issue were not stated, while 157 registrations of births under the New South Wales Legitimation Act are also excluded. The tables refer, therefore, to a total of 104,742 mothers. They exclude children by former marriages and still-born children, but include ex-nuptial children, previous issue by the same father. The tables cannot be given *in extenso*, but the following are their most salient features. The complete tabulations are shewn in "Commonwealth Bulletin of Population and Vital Statistics, No. 20; Vital Statistics of the Commonwealth for the Year 1909."

DURATION OF MARRIAGE AND ISSUE OF MOTHERS, OF ALL AGES, COMMONWEALTH, 1909.

Duration of Marriage.	Total Mothers.	Total Issue.	Average Number of Children.	Duration of Marriage.	Total Mothers.	Total Issue.	Average Number of Children.
Years.				Years.			
0- 1 ...	16,853	17,077	1.01	18-19 ...	1,603	12,223	7.62
1- 2 ...	7,706	8,607	1.12	19-20 ...	1,314	10,449	7.95
2- 3 ...	7,857	14,295	1.82	20-21 ...	1,101	9,068	8.23
3- 4 ...	9,266	19,608	2.11	21-22 ...	925	8,054	8.49
4- 5 ...	7,474	18,900	2.53	22-23 ...	677	6,236	9.21
5- 6 ...	6,872	20,034	2.91	23-24 ...	513	4,988	9.72
6- 7 ...	5,770	18,840	3.26	24-25 ...	405	4,057	10.01
7- 8 ...	5,541	20,205	3.64	25-26 ...	269	2,829	10.51
8- 9 ...	5,042	20,413	4.04	26-27 ...	151	1,639	10.85
9-10 ...	4,535	19,819	4.37	27-28 ...	110	1,221	11.10
10-11 ...	3,899	18,595	4.77	28-29 ...	57	661	11.59
11-12 ...	3,358	16,954	5.04	29-30 ...	28	342	12.21
12-13 ...	3,014	16,415	5.44	30-31 ...	10	126	12.60
13-14 ...	2,722	15,811	5.81	31-32 ...	5	61	12.20
14-15 ...	2,161	13,315	6.16	32-33 ...	2	27	13.50
15-16 ...	2,021	13,177	6.52				
16-17 ...	1,806	12,448	6.89	Total	104,742	358,559	3.42
17-18 ...	1,675	12,065	7.20				

AGES AND ISSUES OF MOTHERS, COMMONWEALTH, 1909.

Ages of Mothers.	Total Mothers.	Total Issue.	Average Number of Children.	Ages of Mothers.	Total Mothers.	Total Issue.	Average Number of Children.
Under 20 years	3,664	4,366	1.19	40-44 years ...	6,474	46,067	7.12
20-24 years ...	23,785	42,288	1.77	45 yrs. and over	668	5,842	8.75
25-29 „ ...	30,435	81,396	2.67				
30-34 „ ...	23,459	90,382	3.85				
35-39 „ ...	16,257	88,218	5.43	All ages ...	104,742	358,559	3.42

PREVIOUS ISSUE OF MOTHERS OF VARIOUS AGES, COMMONWEALTH, 1909.

Previous Issue.	Mothers' Ages.							
	Under 20 Years.	20-24 Years.	25-29 Years.	30-34 Years.	35-39 Years.	40-44 Years.	45 Years and Over.	Total.
0	3,041	11,720	8,127	3,127	1,124	244	24	27,407
1	562	7,459	7,779	3,859	1,353	285	21	21,318
2	57	3,323	6,507	4,287	1,838	398	20	16,430
3	4	975	4,278	3,987	2,131	555	29	11,959
4	...	248	2,322	3,280	2,229	603	23	8,705
5	...	44	965	2,368	2,092	694	48	6,211
6	...	12	322	1,364	1,812	708	64	4,282
7	...	3	91	687	1,466	765	70	3,082
8	...	...	28	327	1,067	706	68	2,196
9	...	1	12	113	600	543	63	1,332
10	...	...	3	43	300	440	92	878
11	...	...	1	11	145	270	61	488
12	...	...	...	4	61	126	34	225
13	...	...	...	1	25	72	28	126
14	...	...	...	1	10	45	14	70
15	...	...	...	...	4	12	5	21
16	...	...	...	...	...	5	2	7
17	...	...	...	...	...	3	...	3
18	...	...	...	...	...	...	1	1
19	...	...	...	...	...	...	1	1
Total Mothers	3,664	23,785	30,435	23,459	16,257	6,474	668	104,742

The tables shew a fairly regular increase in the number of children up to the period where the marriage has lasted twenty-one years, and it appears that the average interval between successive confinements up to that period was rather less than two and a half years. One mother of the age-group 40 to 44 years, had her twentieth child in the twenty-ninth year of her marriage. The average number of children of all marriages was 3.42, the corresponding figure for 1908 having been 3.44.

A similar table has been prepared shewing the previous issue of mothers of twins and triplets, from which it appears that 231 mothers had twins at their first confinement; 175 at their second; 168 at their third; 127 at their fourth; 103 at their fifth; 79 at their sixth; 65 at their seventh; 47 at their eighth; 28 at their ninth; 11 at their tenth; 12 at their eleventh; 11 at their twelfth; 4 at their thirteenth; and 1 at her fourteenth.

Of the fourteen cases of triplets 2 occurred at the first confinement; 2 at the second; 2 at the third; 2 at the fourth; 2 at the fifth; 3 at the seventh; and 1 at the eighth.

12. **Interval between Marriage and First Birth.**—The following table shews the interval between marriage and first birth. Twins and triplets are included, the elder born only being enumerated.

INTERVAL BETWEEN MARRIAGE AND FIRST BIRTH, COMMONWEALTH, 1909.

Interval.	Number of First Children.	Interval.	Number of First Children.	Interval.	Number of First Children.
Under 1 month	482	1 year	6,973	13 years	15
1 month	509	2 years	1,823	14 ,,	6
2 months	808	3 ,,	745	15 ,,	2
3 ,,	1,001	4 ,,	386	16 ,,	3
4 ,,	1,179	5 ,,	201	17 ,,	4
5 ,,	1,376	6 ,,	162	18 ,,	7
6 ,,	1,604	7 ,,	99	19 ,,	3
7 ,,	1,338	8 ,,	64		
8 ,,	1,197	9 ,,	35		
9 ,,	3,364	10 ,,	35		
10 ,,	2,220	11 ,,	22	Total	27,407
11 ,,	1,723	12 ,,	21		

Of these 27,407 children 14,042 were males and 13,365 were females; the masculinity of first births was therefore only 105.07 as compared with 105.20 for total births.

The previous issue of mothers of ex-nuptial children is not recorded, but for the purposes of the following table all ex-nuptial births have been assumed to be first births, and the table shews, together with the ages of mothers, the first births which occurred within less than nine months of the date of marriage, and those which occurred at a later date, as well as the ex-nuptial births. A comparison of the column shewing the total of nuptial births within less than nine months of marriage and of ex-nuptial births with the next column, shewing the nuptial births which occurred not less than nine months after marriage, reveals the fact that for all ages the proportion of the two was as 9 to 10, while at ages up to and including 21 there was a great preponderance of nuptial births following on antenuptial conception and of ex-nuptial births. It must, of course, be understood that a certain number of premature births are necessarily included amongst the births which occurred within less than nine months of marriage, but there is no means of arriving at the proportion of those births.

AGES OF MOTHERS AND INTERVAL BETWEEN MARRIAGE AND FIRST BIRTH, etc., COMMONWEALTH, 1909.

Age of Mother at Birth of Child.	Ex-nuptial Births.	Nuptial Births less than nine months after Marriage.	Total of two preceding columns.	Nuptial Births nine months after Marriage and later.	Total Nuptial First Births.	Nuptial First Births and Ex-nuptial Births.
Years.						
12 ...	2	...	2	...	...	2
14 ...	9	3	12	...	3	12
15 ...	61	15	76	...	15	76
16 ...	184	99	283	12	111	295
17 ...	369	324	693	77	401	770
18 ...	528	726	1,254	234	960	1,488
19 ...	631	1,035	1,666	516	1,551	2,182
20 ...	671	1,015	1,686	793	1,808	2,479
21 ...	596	1,211	1,807	1,187	2,398	2,994
22 ...	571	1,060	1,631	1,545	2,605	3,176
23 ...	526	839	1,365	1,638	2,477	3,003

AGES OF MOTHERS AND INTERVAL BETWEEN MARRIAGE AND FIRST BIRTH—Cont.

Age of Mother at Birth of Child.	Ex-nuptial Births.	Nuptial Births less than nine months after Marriage.	Total of two preceding columns.	Nuptial Births nine months after Marriage and later.	Total Nuptial First Births.	Nuptial First Births and Ex-nuptial Births.
Years.						
24 ...	401	706	1,107	1,726	2,432	2,833
25 ...	302	530	832	1,601	2,131	2,433
26 ...	264	444	708	1,431	1,875	2,139
27 ...	200	325	525	1,265	1,590	1,790
28 ...	209	266	475	1,150	1,416	1,625
29 ...	175	208	383	907	1,115	1,290
30 ...	180	130	310	821	951	1,131
31 ...	100	124	224	560	684	784
32 ...	109	105	214	495	600	709
33 ...	102	86	188	418	504	606
34 ...	105	54	159	334	388	493
35 ...	87	60	147	291	351	438
36 ...	79	39	118	234	273	352
37 ...	63	21	84	190	211	274
38 ...	67	16	83	154	170	237
39 ...	59	15	74	104	119	178
40 ...	41	16	57	79	95	136
41 ...	32	3	35	46	49	81
42 ...	26	6	32	46	52	78
43 ...	20	5	25	29	34	54
44 ...	7	5	12	9	14	21
45 ...	9	1	10	10	11	20
46 ...	6	...	6	8	8	14
47 ...	1	1	2	2	3	4
48 ...	1	...	1	1	1	2
49 ...	...	1	1	...	1	1
Not stated	15	...	15	...	...	15
Total ...	6,808	9,494	16,302	17,913	27,407	34,215

§ 2. Marriages.

1. **Marriages, 1901 to 1909.**—The number of marriages registered in the Commonwealth in 1909 was 33,775, the highest number ever recorded. There has been a steady increase in the annual number of marriages in each State since 1903, and the crude marriage-rate increased similarly in all the States until 1907, with the exception of Western Australia, where a further diminution may reasonably be expected until the composition of the population as to sexes and ages approaches more closely to that of the other States. In 1908 all the States, with the exception of New South Wales and Tasmania, had a lower marriage rate than in 1907, but the rate recovered in 1909, and was higher in that year than in 1907 in all the States with the exception of Victoria and Western Australia. The number of marriages in each State since 1901 is shewn below:—

TOTAL MARRIAGES, COMMONWEALTH, 1901 to 1909.

Year.	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
1901 ...	10,538	8,406	3,341	2,309	1,821	1,338	27,753
1902 ...	10,486	8,477	3,243	2,383	2,024	1,313	27,926
1903 ...	9,759	7,605	2,933	2,272	2,064	1,344	25,977
1904 ...	10,424	8,210	3,078	2,534	2,088	1,350	27,684
1905 ...	10,970	8,774	3,173	2,599	2,123	1,365	29,004
1906 ...	11,551	8,930	3,588	2,681	2,261	1,399	30,410
1907 ...	12,187	9,575	4,105	3,079	2,114	1,410	32,470
1908 ...	12,641	9,335	4,009	3,122	2,012	1,432	32,551
1909 ...	13,025	9,431	4,543	3,285	1,997	1,494	33,775

2. **Marriage Rates, 1901 to 1909.**—The number of marriages registered per thousand of mean population is shewn in the following table for the same period:—

CRUDE MARRIAGE RATE[1], COMMONWEALTH, 1901 to 1909.

Year.	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
1901 ...	7.73	6.98	6.66	6.36	9.66	7.76	7.32
1902 ...	7.54	7.00	6.36	6.54	9.83	7.55	7.24
1903 ...	6.89	6.29	5.72	6.21	9.32	7.57	6.66
1904 ...	7.23	6.80	5.93	6.86	8.83	7.55	7.00
1905 ...	7.44	7.24	6.03	6.94	8.48	7.62	7.22
1906 ...	7.65	7.30	6.73	7.06	8.70	7.82	7.44
1907 ...	7.86	7.73	7.62	7.98	8.06	7.86	7.81
1908 ...	8.00	7.42	7.30	7.84	7.59	7.88	7.69
1909 ...	8.11	7.34	8.04	8.00	7.37	8.11	7.82

1. Number of marriages (not persons married) per 1000 of mean annual population.

As in some international tabulations the marriage rates are calculated per 1000 of the unmarried population of 15 years and over, the corresponding rates have been worked out for the Commonwealth for the three last Census periods. The figures comprise in each case the Census year with the year immediately preceding, and the year immediately following, and are as follows:—Years 1880-82, 48.98; years 1890-92, 45.74; years 1900-02, 42.14. These rates refer, of course, to persons married and not to marriages, as do the rates in the preceding table.

3. **Marriage Rates in Various Countries.**—A comparison of the Australian marriage rate with that of European countries shews it to be considerably below the rates prevailing in the East of Europe, almost identical with those of Central and Western Europe, and higher than those of the North of Europe:—

CRUDE MARRIAGE RATE.—VARIOUS COUNTRIES.

Country.	Year.	Crude Marriage Rate.	Country.	Year.	Crude Marriage Rate.
Bulgaria	1907	9.90	Switzerland... ...	1907	7.80
Rumania	1908	9.20	Austria	1907	7.50
Servia	1908	9.20	England and Wales ...	1908	7.45
Hungary	1908	9.10	Denmark	1908	7.40
Canada (Ontario) ...	1906	9.0	Netherlands ...	1908	7.20
Russia	1903	8.90	Spain	1908	7.15
New Zealand... ...	1909	8.33	Finland	1907	6.85
Italy	1908	8.30	Scotland	1908	6.55
German Empire ...	1907	8.15	Norway	1908	6.10
France	1908	8.05	Sweden	1908	6.10
Belgium	1907	8.0	Ireland	1908	5.20
Commonwealth ...	1909	7.82			

4. **Age at Marriage.**—(*a*) The age at marriage of bridegrooms and brides will be found in the following table, the previous conjugal condition of the contracting parties being distinguished. It will be seen that no less than 1219 males were married during 1909 who were less than twenty-one years of age. The corresponding number of females was 6911, of whom four were widows and one was divorced. At the other end of the scale there were twenty-four men of sixty-five years and upwards, who described themselves as bachelors, and seven spinsters of corresponding ages.

AGES AND CONJUGAL CONDITION OF PERSONS MARRIED, 1909.

COMMONWEALTH.

Age at Marriage.	Bridegrooms.				Brides.			
	Bachelors	Widowers	Divorced.	Total.	Spinsters.	Widows.	Divorced.	Total.
13 years ...	...	...	...	...	1	...	...	1
14 „ ...	...	...	...	...	12	...	...	12
15 „ ...	1	...	...	1	54	...	...	54
16 „ ...	5	...	...	5	267	...	...	267
17 „ ...	17	...	...	17	774	...	...	774
18 „ ...	141	...	...	141	1,484	...	...	1,484
19 „ ...	343	...	...	343	2,037	2	1	2,040
20 „ ...	712	...	...	712	2,277	2	...	2,279
21 „ ...	1,947	1	...	1,948	3,711	8	3	3,722
22 „ ...	2,307	...	...	2,307	3,107	12	5	3,124
23 „ ...	2,573	10	1	2,584	2,869	18	7	2,894
24 „ ...	2,755	8	...	2,763	2,646	26	6	2,678
25 „ ...	2,671	10	...	2,681	2,213	35	12	2,260
26 „ ...	2,485	17	3	2,505	1,856	35	9	1,900
27 „ ...	2,106	23	2	2,131	1,524	43	11	1,578
28 „ ...	2,114	26	5	2,145	1,327	50	4	1,381
29 „ ...	1,863	50	6	1,919	1,117	59	10	1,186
30 „ ...	1,381	33	5	1,419	897	57	11	965
31 „ ...	1,113	43	2	1,158	582	61	7	650
32 „ ...	1,030	58	3	1,091	512	63	16	591
33 „ ...	829	42	5	876	400	65	6	471
34 „ ...	727	49	7	783	381	75	12	468
35 „ ...	631	53	8	692	306	66	21	393
36 „ ...	573	83	6	662	261	68	8	337
37 „ ...	437	55	8	500	206	70	5	281
38 „ ...	452	86	6	544	211	76	8	295
39 „ ...	388	97	5	490	136	85	4	225
40 „ ...	314	95	7	416	118	81	6	205
41 „ ...	234	75	1	310	76	53	1	130
42 „ ...	230	85	11	326	82	52	7	141
43 „ ...	143	69	3	215	68	65	10	143
44 „ ...	140	69	7	216	52	49	3	104
45 „ ...	151	87	8	246	35	57	2	94
46 „ ...	92	83	6	181	29	43	4	76
47 „ ...	91	71	9	171	31	54	2	87
48 „ ...	82	83	4	169	24	49	3	76
49 „ ...	69	63	5	137	13	29	3	45
50 „ ...	58	63	1	122	23	42	...	65
51 „ ...	24	42	3	69	10	19	...	29
52 „ ...	38	54	3	95	11	28	...	39
53 „ ...	20	52	2	74	5	21	1	27
54 „ ...	21	45	2	68	7	17	...	24
55 „ ...	20	43	...	63	1	12	1	14
56 „ ...	11	31	1	43	4	15	1	20
57 „ ...	15	31	1	47	4	8	1	13
58 „ ...	11	36	...	47	1	16	...	17
59 „ ...	6	27	2	35	2	8	...	10
60 „ ...	7	38	...	45	2	16	...	18
61 „ ...	9	19	...	28	...	4	...	4
62 „ ...	6	13	...	19	1	9	...	10
63 „ ...	3	25	...	28	1	7	...	8
64 „ ...	1	23	1	25	...	5	...	5
65 „ ...	4	23	1	28	3	10	...	13
66 „ ...	2	12	...	14	1	8	...	9
67 „ ...	1	18	...	19	...	2	...	2
68 „ ...	1	11	...	12	2	4	...	6
69 „ ...	1	13	...	14	1	1	...	2
70 „ ...	4	14	...	18	...	3	...	3

AGES AND CONJUGAL CONDITION OF PERSONS MARRIED, 1909—Continued.
COMMONWEALTH.

Age at Marriage.	Bridegrooms.				Brides.			
	Bachelors	Widowers	Divorced.	Total.	Spinsters.	Widows.	Divorced.	Total.
71 years ...	3	4	...	7	...	4	...	4
72 ,, ...	2	5	...	7	...	6	...	6
73 ,, ...	1	6	...	7	...	1	...	1
74 ,, ...	...	5	...	5	...	...	...	...
75 ,, ...	1	7	...	8	...	1	...	1
76 ,, ...	...	2	...	2	...	...	...	...
77 ,, ...	...	3	...	3	...	2	...	2
78 ,, ...	...	1	...	1	...	...	...	...
79 ,, ...	...	1	...	1	...	...	...	...
80 ,, ...	2	4	...	6	...	...	...	...
81 ,, ...	...	1	...	1	...	...	...	...
84 ,, ...	1	1	...	2	...	...	...	...
87 ,, ...	1	1	...	2	...	...	...	...
89 ,, ...	...	1	...	1	...	...	...	...
Not stated ...	5	...	...	5	11	1	...	12
Total ...	31,426	2,199	150	33,775	31,786	1,778	211	33,775

(*b*) The relative ages of bridegrooms and brides are shewn for single years in "Bulletin of Population and Vital Statistics, No. 20"; a condensation is here given into age-groups of five years:—

RELATIVE AGES OF PERSONS MARRIED, COMMONWEALTH, 1909.

Ages of Bridegrooms.	Total Bridegrooms.	Ages of Brides.								
		Under 15.	15 to 19.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.	45 and Upwds.	Not Stated.
Under 20 ...	507	2	343	147	14	1	...	...	...	...
20 to 24 ...	10,314	9	2,600	6,314	1,183	160	35	7	4	2
25 to 29 ...	11,381	1	1,192	5,547	3,737	725	134	26	16	3
30 to 34 ...	5,327	...	313	1,743	1,972	961	273	46	17	2
35 to 39 ...	2,888	...	126	620	842	674	453	126	46	1
40 to 44 ...	1,483	1	24	203	341	356	304	180	73	1
45 to 49 ...	904	...	12	78	147	162	188	185	132	...
50 to 54 ...	428	...	7	26	42	66	87	73	127	...
55 to 59 ...	235	...	1	8	16	23	30	41	116	...
60 to 64 ...	145	...	1	3	7	9	14	21	90	...
65 and upwards	158	...	...	6	4	8	13	18	109	...
Not stated ...	5	...	...	2	...	...	...	...	...	3
Total Brides ...	33,775	13	4,619	14,697	8,305	3,145	1,531	723	730	12

5. **Previous Conjugal Condition.**—In a previous table the total number of bachelors and spinsters, widowed and divorced persons, who were married during the year 1909, was shewn. In the following table the relative conjugal conditions of the contracting parties are given:—

RELATIVE CONJUGAL CONDITION OF PERSONS MARRIED, COMMONWEALTH, 1909.

Conjugal Condition.		Total Bridegrooms.	Brides.		
			Spinsters.	Widows.	Divorced.
Bridegrooms	Bachelors ...	31,426	30,137	1,124	165
	Widowers ...	2,199	1,524	636	39
	Divorced ...	150	125	18	7
Total Brides		33,775	31,786	1,778	211

6. **Birthplaces of Persons Married.** —Information as to the birthplaces of persons who were married in 1909 was not obtained in the State of Western Australia; the following figures refer, therefore, only to New South Wales, Victoria, Queensland, South Australia and Tasmania. As might be expected, there were more brides than bridegrooms who were born in one of the Commonwealth States, and more bridegrooms than brides who were born elsewhere. In "Bulletin No. 20 of Population and Vital Statistics" the relative birthplaces of bridegrooms and brides will be found tabulated.

BIRTHPLACES OF PERSONS MARRIED, 1909.

COMMONWEALTH.[1]

Birthplaces.	Bride-grooms.	Brides.	Birthplaces.	Bride-grooms.	Brides.
New South Wales ...	10,411	11,313	Argentine	1	...
Victoria	8,678	9,047	Chile	2	...
Queensland	3,011	3,829	Peru	1	...
South Australia ...	3,328	3,440	S. America, so described	2	2
Western Australia ...	29	13			
Tasmania	1,442	1,567	Arabia	1	...
			Asia Minor	1	...
New Zealand	374	302	Baluchistan ...	...	1
			Burmah	1	1
Austria-Hungary ...	18	8	Ceylon	9	2
Belgium	3	1	China	54	5
Bulgaria	1	...	Cyprus	1	...
Channel Islands ...	3	2	Dutch East Indies ...	4	...
Denmark	45	12	India	46	16
England	2,412	1,275	Japan	8	5
Finland	6	1	Malay States ...	1	1
France	23	10	Straits Settlements ...	2	3
Germany	223	83	Syria	10	7
Greece	10	2			
Iceland	1	...	Africa (so described) ...	...	1
Ireland	516	348	Cape of Good Hope ...	3	4
Isle of Man	1	2	Cape Verde Islands ...	1	...
Italy	50	17	Egypt	5	2
Malta	2	...	Madagascar... ...	1	...
Netherlands	5	...	Mauritius	6	2
Norway	28	6	S. Africa (so described)	23	12
Portugal	4	...	W. Africa ,,	1	...
Rumania	1	2			
Russia	33	12	Fiji	11	5
Scotland	622	299	Neu Pommern ...	...	1
Spain	3	2	New Caledonia ...	3	3
Sweden	44	9	New Guinea ...	...	1
Switzerland	10	3	New Hebrides ...	4	...
Turkey	4	4	Samoa	3	...
Wales	63	17	Solomon Islands ...	3	...
			S. Sea Is. (so describ'd)	13	2
Canada	29	18	Born at sea ...	38	20
Newfoundland ...	1	...	Birthplace not stated	8	9
United States... ...	71	28			
West Indies	6	1	Total	31,778	31,778

1. Exclusive of Western Australia.

7. **Occupations and Ages of Bridegrooms.**—A tabulation has been made of the occupations and ages of all males married in the Commonwealth in the years 1907, 1908 and 1909. In "Bulletin No. 20" the 1909 tabulation is shewn for orders of occupations: here it is repeated for classes only, with a subdivision of the Industrial class and of the class of Primary Producers. The average ages of the persons falling under those twelve subdivisions were determined, and it appears that, apart from the Indefinite class, which consists chiefly of persons who have retired from business and

who are living on their own means, and where a high average age may naturally be expected, the average age ranges from 28.40 in the Manufacturing class to 33.10 years in the Pastoral class. The averages, calculated on the basis of the 1907 and 1908 figures, have been added for the purposes of comparison. The figures for three years are, however, rather small to allow of definite conclusions being drawn. The results obtained are shewn in the following table:—

OCCUPATIONS AND AGES OF BRIDEGROOMS, COMMONWEALTH, 1909.

Ages at Marriage.	Professional.	Domestic.	Mercantile.	Transport and Communication.	Industrial.			Primary Producers.				Indefinite.
					Manufacturing.	Building and Construction.	Indefinite Industrial Workers.	Agricultural.	Pastoral.	Mines and Quarries.	Other Primary Producers.	
15 years	...	...	...	...	...	..	1	...	...	...	..	...
16 „	...	...	2	...	...	...	2	...	1	...	...	...
17 „	...	...	1	1	5	1	7	...	...	2	...	...
18 „	3	2	14	19	21	10	48	8	...	9	7	...
19 „	8	5	37	40	67	22	111	29	...	17	7	...
20 „	16	18	82	70	149	53	180	59	7	66	11	1
21 „	49	48	263	213	352	147	509	167	25	141	30	4
22 „	70	72	323	247	375	161	565	244	41	167	33	9
23 „	100	58	373	312	401	191	587	328	35	147	45	7
24 „	127	54	418	271	443	190	630	366	45	177	37	5
25 „	173	51	460	245	385	182	575	365	49	151	40	5
26 „	163	59	417	244	379	157	504	385	43	116	32	6
27 „	127	46	376	176	285	113	470	323	67	114	28	6
28 „	143	46	404	170	270	113	459	298	68	134	35	5
29 „	117	37	328	169	218	103	387	365	59	101	29	6
30 „	89	33	258	112	154	73	274	258	59	93	15	1
31 „	84	28	227	94	136	48	208	211	43	62	17	...
32 „	74	27	199	90	101	53	223	189	59	62	13	1
33 „	63	16	141	77	109	35	157	171	42	52	11	2
34 „	65	16	119	60	76	35	146	159	37	58	9	3
35 to 39 years	201	87	471	207	289	139	539	578	160	160	42	15
40 „ 44 „	109	41	252	110	142	88	272	295	85	62	10	17
45 „ 49 „	54	32	120	73	112	52	183	156	54	48	10	10
50 years and upwards ...	77	21	140	56	114	75	167	187	40	34	15	40
Not stated	...	...	...	...	...	1	2	1	...	...	1	...
Total ...	1,912	797	5,425	3,056	4,583	2,042	7,206	5,142	1,019	1,973	477	143
Average age—years (1909)	31.25	30.09	29.80	28.61	28.40	29.12	28.86	31.07	33.10	28.78	28.89	39.88
„ „ „ (1908)	31.01	30.62	29.77	28.83	28.46	29.02	28.89	30.96	32.63	29.00	29.33	41.12
„ „ „ (1907)	31.26	30.12	29.74	28 90	28.01	29.71	28.76	30.93	32.55	29.03	29.19	38.26

8. **Fertility of Marriages.**—The quotient obtained by division of the nuptial births registered, say during the five years 1905 to 1909, by the number of marriages registered during the five years 1900 to 1904, *i.e.*, the period antecedent by five years to the period of the births, has been called the "fertility of marriages." This works out at 3.77, or in other words, the number of children to be expected from every four marriages in the Commonwealth is fifteen. This method, while not professing any claim to accuracy, furnishes results which agree fairly well with those found by more elaborate and careful investigation.

9. **Registration of Marriages.**—In all the States of the Commonwealth marriages may be celebrated either by ministers of religion, whose names are registered for that purpose with the Registrar-General, or by certain civil officers, in most cases district registrars. The percentage of marriages celebrated by ministers of religion has increased from 96.25 per cent. in 1901 to 97.55 per cent. in 1909. The figures for the individual States in 1909 were: New South Wales, 98.30 per cent.; Victoria, 99.16 per cent.; Queensland, 95.62 per cent.; South Australia, 95.68 per cent.; Western Australia, 92.24 per cent.; and Tasmania, 99.20 per cent. The registered ministers in 1909 belonged to forty-four different denominations, some of which, however, can hardly be regarded as having any valid existence. The extraordinary number of marriages credited to some

denominations, the number of whose adherents, according to the Census returns, was very small indeed, is not inconsistent with the supposition that some of these denominations have been created for the purpose of obtaining the registration necessary to conduct marriages, or to be connected with a so-called "Matrimonial Agency." The figures for 1909 are shewn in the following table :—

MARRIAGES IN EACH DENOMINATION, COMMONWEALTH, 1909.

Denomination.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
Church of England	5,304	1,968	1,145	736	792	487	10,432
Roman Catholic Church ...	2,335	1,629	918	321	360	196	5,759
Presbyterian Church of Australia	1,693	1,565	617	139	173	178	4,365
Free Presbyterian Church ...	...	...	...	6	...	...	6
Independent Presbyterian Church	...	551	...	...	...	28	579
Welsh Presbyterian Church ...	...	6	...	...	...	...	6
Methodist Church	1,506	1,412	724	1,083	350	295	5,370
Independent Methodist Church...	...	...	2	...	...	...	2
Congregational Church ...	1,447	1,355	142	160	64	156	3,324
Baptist Church	193	331	242	210	49	124	1,149
German Baptist Church ...	...	...	4	...	...	...	4
Particular Baptist Church ...	2	...	...	...	...	...	2
Church of Christ	165	181	18	162	24	5	555
Christian Brethren	9	...	...	26	...	...	35
Lutheran Church	18	72	136	211	9	...	446
Evangelical Lutheran Church ...	10	...	5	...	...	...	15
German Lutheran Church ...	1	...	11	...	...	...	12
Scandinavian Lutheran Church...	...	...	1	...	...	...	1
Greek Orthodox Church ...	6	1	...	...	1	...	8
Australian Church	...	16	...	...	...	...	16
Unitarian Church	7	...	...	4	...	...	11
Moravian Church	...	...	1	...	...	...	1
Apostolic Church	1	...	14	...	...	...	15
Catholic Apostolic Church ...	...	3	2	...	...	...	5
Christadelphians	5	...	...	...	...	...	5
Welsh Protestant Church ...	...	...	10	...	...	...	10
Plymouth Brethren	1	...	...	...	...	...	1
Salvation Army	40	35	36	31	13	5	160
Seventh-Day Adventists ...	5	4	3	5	...	...	17
Latter-Day Saints	7	4	...	2	...	...	13
Church of the Resurrection ...	1	...	...	...	...	...	1
New Church	1	1	...	...	...	...	2
Free Church	5	...	...	...	...	...	5
Free Christian Church... ...	...	87	...	...	...	...	87
United Christian Church ...	...	2	...	...	...	...	2
Christian Assembly	...	...	12	...	...	...	12
Christian, Unattached, Unsectar'n	...	1	...	...	...	...	1
City Mission	...	...	...	42	...	...	42
Ballarat Town Mission ...	...	70	...	...	...	...	70
Joyful News Mission	...	...	293	...	...	...	293
Helping Hand Mission ...	...	...	...	...	...	2	2
Aboriginal Mission	3	...	...	...	...	...	3
West End Mission	...	...	2	...	...	...	2
Jewish	39	44	...	5	3	...	91
Registrar's Office	221	93	199	142	159	12	826
Not stated	...	...	6	...	...	6	12
Total	13,025	9,431	4,543	3,285	1,997	1,494	33,775

10. **Mark Signatures.**—The marriage registers afford some clue, even if an imperfect one, to the illiteracy of the adult population, since a small and constantly diminishing percentage of bridegrooms and brides sign the registers with marks.

(i.) *Males and Females, 1901 to 1909.* For a number of years, with the exception of 1908, mark signatures by males have been slightly more numerous than those by females, the percentages for the Commonwealth during the past nine years having been as follows :—

PERCENTAGE OF MARK SIGNATURES AT MARRIAGE, COMMONWEALTH, 1901 to 1909.

Year. ...	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.
Male...	1.35	1.21	1.17	0.95	0.91	0.92	0.81	0.71	0.65
Female	1.29	1.11	1.02	0.91	0.93	0.86	0.70	0.73	0.62

(ii.) *Mark Signatures in Commonwealth States, 1901 to 1909.* The following table shews that while the Tasmanian percentage has been the highest, and the Victorian the lowest, in each of the nine years under review, there has been a marked decrease in every State :—

PERCENTAGE OF MARK SIGNATURES AT MARRIAGE, COMMONWEALTH, 1901 to 1909.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
1901 ...	1.34	0.53	2.56	0.95	0.99	4.11	1.32
1902 ...	1.22	0.61	1.93	1.15	0.69	3.12	1.16
1903 ...	1.10	0.60	1.86	1.32	0.75	2.38	1.10
1904 ...	0.90	0.54	1.72	0.65	0.53	2.85	0.93
1905 ...	1.12	0.44	1.39	0.83	0.57	2.12	0.92
1906 ...	0.94	0.43	1.67	0.67	0.66	2.18	0.89
1907 ...	0.87	0.36	1.14	0.55	0.64	2.02	0.76
1908 ...	0.79	0.33	1.20	0.56	0.82	1.57	0.72
1909 ...	0.60	0.22	1.16	0.64	0.68	2.07	0.64

A complete disappearance of mark signatures is hardly to be expected, for the available information tends to shew that two-thirds of those who sign with marks are natives of their respective States, who apparently have not made use of the advantages offered to them by the State schools.

§ 3. Deaths.

1. **Male and Female Deaths, 1901 to 1909.**—The total number of deaths registered in the Commonwealth from 1901 to 1909 inclusive, gives an annual average of 26,216 males and 19,231 females, the details being as follows :—

MALE DEATHS, COMMONWEALTH, 1901 to 1909.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
1901	9,327	9,035	3,838	2,289	1,653	1,001	27,143
1902	9,535	9,152	3,924	2,389	1,832	1,044	27,876
1903	9,428	8,626	3,951	2,242	1,829	1,136	27,212
1904	8,733	7,992	3,259	2,071	1,823	1,061	24,939
1905	8,709	8,273	3,499	2,041	1,728	1,061	25,311
1906	8,715	8,342	3,212	2,109	1,878	1,118	25,374
1907	9,444	7,977	3,482	2,087	1,866	1,083	25,939
1908	9,298	8,816	3,500	2,106	1,800	1,112	26,632
1909	9,184	8,070	3,419	2,140	1,671	1,030	25,514
Rate,* 1909 ...	10.74	12.54	11.11	9.76	10.66	10.89	11.20

* Number of deaths per 1000 of mean population.

FEMALE DEATHS, COMMONWEALTH, 1901 to 1909.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
1901	6,694	6,869	2,169	1,776	866	813	19,187
1902	7,111	7,025	2,280	1,925	991	870	20,202
1903	7,069	6,969	2,395	1,709	959	980	20,081
1904	6,627	6,401	1,991	1,707	994	913	18,633
1905	6,269	6,403	2,004	1,763	981	783	18,203
1906	6,260	6,895	1,883	1,822	1,206	893	18,959
1907	6,967	6,562	2,116	1,741	1,065	915	19,366
1908	6,757	6,950	2,180	1,811	1,079	1,017	19,794
1909	6,626	6,366	2,111	1,710	1,033	812	18,658
Rate,* 1909 ...	8.82	9.93	8.20	8.94	9.04	9.06	9.13

* Number of deaths per 1000 of mean population.

2. **Male and Female Death Rates, 1909.**—The crude male and female death rates for 1909 only are given, viz., in the last line of the preceding tables: both are highest for Victoria and Tasmania, while the Queensland rate is lowest for females, and the South Australian for males.

Owing to differences in the age constitution of the six States, the crude rates are not, however, strictly comparable, but as has been pointed out in the case of the births, the available data, at a period so remote from the Census, are insufficient for a satisfactory distribution of the population according to ages. For the purposes of calculating the "Index of Mortality" (see page 196) a distribution into five age-groups has, however, been made.

3. **Death Rates of Various Countries.**—A comparison with foreign States is, for the same reason, apt to show the Commonwealth in too favourable a light, but even if an allowance for the different age constitution were made, it would still be found occupying a very enviable position. The following table gives particulars of the death rates of various countries for the latest available years :—

DEATH RATES* OF VARIOUS COUNTRIES.

Country.	Year.	Crude Death Rate.	Country.	Year.	Crude Death Rate.
New Zealand	1909	9.2	German Empire ...	1907	18.0
Commonwealth ...	**1909**	**10.2**	France	1908	19.0
Norway	1908	14.5	Japan	1907	20.9
Denmark	1908	14.3	Bulgaria	1907	22.3
England and Wales ...	1908	14.7	Jamaica	1908	22.4
Canada (Ontario) ...	1906	14.8	Austria	1907	22.6
Sweden	1908	14.9	Italy	1908	22.6
United Kingdom ...	1908	15.1	Spain	1908	23.3
Netherlands	1908	15.3	Servia	1908	23.7
Belgium	1907	15.7	Hungary	1908	24.8
Scotland	1908	16.1	Rumania	1908	27.7
Switzerland	1907	16.8	Ceylon	1908	29.4
Ireland	1908	17.6	Russia, European ...	1903	30.0
Finland	1907	17.9	Chile	1908	31.6

* Number of deaths per 1000 of mean population.

4. **Total Deaths, 1901 to 1909.**—The total number of deaths in each of the Commonwealth States during the nine years 1901 to 1909, is shewn below :—

TOTAL DEATHS, COMMONWEALTH, 1901 to 1909.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
1901 ...	16,021	15,904	6,007	4,065	2,519	1,814	46,330
1902 ...	16,646	16,177	6,204	4,314	2,823	1,914	48,078
1903 ...	16,497	15,595	6,346	3,951	2,788	2,116	47,293
1904 ...	15,360	14,393	5,250	3,778	2,817	1,974	43,572
1905 ...	14,978	14,676	5,503	3,804	2,709	1,844	43,514
1906 ...	14,975	15,237	5,095	3,931	3,084	2,011	44,333
1907 ...	16,411	14,539	5,598	3,828	2,931	1,998	45,305
1908 ...	16,055	15,766	5,680	3,917	2,879	2,129	46,426
1909 ...	15,810	14,436	5,530	3,850	2,704	1,842	44,172

5. **Crude Death Rates, 1901 to 1909.**—The death rate for 1909 was the lowest experienced during the nine years under review in every State with the exception of Queensland, where the rate in 1906 was even lower than that of 1909. The Commonwealth rate for 1909 was considerably lower than in any of the other years of the period under review.

CRUDE DEATH RATES,* COMMONWEALTH, 1901 to 1909.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
1901 ...	11.75	13.21	11.98	11.20	13.37	10.52	12.22
1902 ...	11.97	13.36	12.17	11.83	13.71	11.00	12.47
1903 ...	11.65	12.90	12.38	10.80	12.60	11.92	12.12
1904 ...	10.65	11.92	10.11	10.22	11.91	11.04	11.02
1905 ...	10.16	12.10	10.47	10.15	10.82	10.29	10.83
1906 ...	9.92	12.45	9.56	10.35	11.87	11.24	10.85
1907 ...	10.58	11.74	10.39	9.93	11.17	11.14	10.90
1908 ...	10.16	12.53	10.34	9.84	10.86	11.71	10.97
1909 ...	9.84	11.24	9.79	9.37	9.98	10.00	10.22

* Number of deaths per thousand of mean population for year.

6. **Male and Female Death Rates, 1901 to 1909.**—The rise in the Commonwealth rate from 1905 to 1907 was due to an increase in the female death rate, while the increase in 1908 was practically limited to the male death rate, as the subjoined table shews. The decrease from 1908 to 1909 was fairly equal for the male and female rates:—

MALE AND FEMALE DEATH RATES,* COMMONWEALTH, 1901 to 1909.

Year.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.
Male rate ...	13.65	13.78	13.30	12.02	11.98	11.78	11.84	11.94	11.20
Female rate	10.64	11.02	10.82	9.92	9.56	9.81	9.86	9.88	9.13
Crude total rate ...	12.22	12.47	12.12	11.02	10.83	10.85	10.90	10.97	10.22

* Number of deaths per thousand of mean population.

7. **Infantile Death Rate.**—(i.) *Deaths and Death Rates of Male and Female Infants 1901 to 1909.* A marked improvement has taken place in the infantile death rate since

1901, in which year it stood at 103.61 per thousand births registered, while in 1909 it had fallen to 71.56 per thousand, a rate lower than that experienced in any previous year. In the following table, which shews both the total number of deaths of children under one year and the rate per thousand births since 1901, males and females are distinguished. The universal experience that during the first few years of life the excess of male births disappears as a consequence of the higher death rate of male infants is shewn by the fact that out of 490,382 male infants born from 1901 to 1909, 46,981 died during their first year of life, while of 466,689 female infants the number who died was only 37,520:—

NUMBER OF INFANTILE DEATHS AND RATE OF INFANTILE MORTALITY, COMMONWEALTH, 1901 to 1909.

Year.	Registered Deaths under one year.			Rate of Infantile Mortality.*		
	Males.	Females.	Total.	Males.	Females.	Total.
1901	5,888	4,778	10,666	112.13	94.73	103.61
1902	6,008	5,004	11,012	114.19	99.76	107.15
1903	6,003	4,960	10,963	119.09	103.25	111.36
1904	4,713	3,800	8,513	88.33	74.87	81.77
1905	4,884	3,696	8,580	90.62	72.41	81.76
1906	5,002	3,981	8,983	90.10	76.01	83.26
1907	4,993	3,952	8,945	88.39	73.38	81.06
1908	4,885	3,791	8,676	85.53	69.65	77.78
1909	4,604	3,559	8,163	78.73	64.02	71.56

*Number of deaths under 1 year per 1000 births registered.

(ii.) *Infantile Mortality, 1901 to 1909.* Divided among the six States, the rate of infantile mortality during the last nine years was as follows:—

RATE* OF INFANTILE MORTALITY, COMMONWEALTH, 1901 to 1909.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
1901	103.74	102.94	101.94	99.99	128.89	89.05	103.61
1902	109.74	108.60	100.17	94.00	142.01	79.06	107.15
1903	110.35	106.40	119.88	97.09	141.22	110.83	111.36
1904	82.42	77.92	76.13	70.51	113.02	90.70	81.77
1905	80.55	83.30	75.52	72.96	104.19	80.65	81.76
1906	74.53	92.92	74.68	75.90	110.00	90.19	83.26
1907	88.46	72.60	77.65	66.57	97.51	82.97	81.06
1908	75.20	86.05	70.67	69.46	84.72	75.16	77.78
1909	73.87	71.36	71.50	61.04	78.01	64.91	71.56

* Number of deaths under 1 year per 1000 births registered.

The movement has been a fairly regular one, shewing an increase in the rate during 1902 and 1903, and a fall since the latter year, so that the 1907 rate was lower than that for 1901 in every State. The regrettable increase in the Victorian rate for 1908 over that of 1907 was wholly due to the large mortality caused by the phenomenal heat of January, 1908. With the exception of Queensland, where the 1908 rate was exceptionally low, the 1909 rate was the lowest ever experienced in any of the States.

(iii.) *Infantile Mortality in Various Countries.* Compared with European countries the States of the Commonwealth occupy a very enviable position, and it may be pointed out that experience has shewn that a high birth rate is often, though not invariably,

accompanied by a high infantile death rate. The figures in the subjoined table relate to the latest years for which returns are available:—

RATE* OF INFANTILE MORTALITY IN VARIOUS COUNTRIES.

Country.	Year.	Rate of Infantile Mortality. *	Crude Birth Rate. †	Country.	Year.	Rate of Infantile Mortality. *	Crude Birth Rate. †
New Zealand ...	1909	62	27.3	Japan	1907	151	33.0
Norway	1907	67	26.3	Bulgaria	1906	154	44.0
Commonwealth ...	**1909**	**72**	**26.4**	Italy	1907	155	31.5
Sweden	1907	77	25.5	Servia	1908	158	36.8
Ireland	1908	97	23.3	Canada (Ontario)...	1906	162	28.3
Denmark	1907	106	28.3	Spain	1906	173	33.4
Scotland	1907	110	27.0	Jamaica	1908	175	37.6
Finland	1907	112	31.3	German Empire ...	1907	176	32.3
United Kingdom ...	1907	114	26.0	Ceylon	1908	183	40.1
England and Wales	1908	120	26.5	Rumania	1899	198	42.0
Switzerland ...	1907	121	26.8	Hungary	1908	199	36.3
Netherlands ...	1908	125	29.7	Austria	1905	216	33.7
Belgium	1907	132	25.3	Russia, European	1903	256	48.1
France	1906	143	20.6	Chile	1908	320	39.3

* No. of deaths under 1 year per 1000 births registered. † No. of births per 1000 of mean population.

(iv.) *The Effect of Infantile Mortality on Birth Rate.* It has been contended by certain investigators that the birth-rate question is intimately related to that of infantile mortality, and that in many cases a declining birth rate may be to a large extent accounted for by a decline in the infantile death rate, since, in the case in which an infant has survived, the period elapsing before the birth of the next child is likely to be longer than in the case in which the infant has died. It may indeed be readily admitted that in any community the birth rate may be affected in a definite way by variations of infantile mortality, but careful investigation of the question serves to shew that, whether considered from the theoretical aspect with a view to determining the *maximum* and the *probable* effects which a given change in the rate of infantile mortality would produce in the birth rate, or from the practical point of view by observing the fluctuations in the birth rates of various countries which have been collateral with changes in their rates of infantile mortality, there is little ground for the contention that the rate of infantile mortality is an important factor in determining the variations in the birth rate. One calculation which has been made on the basis of normal Australian conditions indicates that the *maximum* effect of increasing the rate of infantile mortality 100 per cent. would, in the absence of other disturbing causes, be to increase the birth rate by only 3¼ per cent., whilst the *probable* effect would be considerably less than this. In other words, the *maximum* effect of an increase in the rate of infantile mortality from 100 to 200 per 1000 births would be to increase the birth rate from say 30 to 31 per 1000 of population. It may be noted too, that although in some countries an increase in birth-rate accompanies an increase in the rate of infantile mortality, in others the birth rate would appear to be quite unaffected by such an increase, while in the case of England and Wales, Scotland, and Ireland, the tendency apparently exhibited is for an increase in the rate of infantile mortality to be associated with a decrease in the birth rate. The conclusion which these results appear to warrant is that although infantile mortality undoubtedly tends on the whole to increase the birth rate, the practical effect produced is so slight that the existence of such a relation may in any instance be quite masked by more important causes of variation.

8. **Deaths in Age-Groups, 1901 to 1909.**—A distribution into age-groups has been made of the 409,023 deaths which occurred in the Commonwealth from 1901 to 1909, and the results are tabulated for each State. It is, however, sufficient here to shew the results for the Commonwealth as a whole, which are as follows:—

DEATHS IN AGE-GROUPS, COMMONWEALTH, 1901 to 1909.

Ages.	Males.	Females.	Total.	Percentage of Total Males.	Percentage of Total Females.	Percentage of Total.
Under 1 year	46,981	37,520	84,501	19.91	21.68	20.66
1 year and under 5 ...	13,814	12,716	26,530	5.85	7.35	6.49
5 years and under 20 ...	13,911	12,419	26,330	5.90	7.18	6.44
20 years and under 40 ...	33,027	28,783	61,810	14.00	16.63	15.11
40 years and under 60 ...	46,026	26,928	72,954	19.51	15.56	17.84
60 years and under 65 ...	13,539	8,332	21,871	5.74	4.81	5.35
65 years and over ..	68,236	46,315	114,551	28.92	26.75	28.00
Age not stated	406	70	476	0.17	0.04	0.11
Total	235,940	173,083	409,023	100.00	100.00	100.00

9. **Deaths at Single Ages and in Age-Groups, 1909.**—The 44,172 deaths which were registered in the Commonwealth in the year 1909 will be found tabulated under single years (in weeks up to one month, and in months up to one year), and in groups of five years in the following table :—

DEATHS AT SINGLE AGES AND IN AGE-GROUPS, 1909.

COMMONWEALTH.

Ages.	Males.	Females.	Total.	Ages.	Males.	Females.	Total.
Under 1 week	1,354	971	2,325	15 years	96	84	180
1 week and under 2 ...	273	199	472	16 „	110	95	205
2 weeks „ „ 3 ...	191	149	340	17 „	113	96	209
3 „ „ „ 4 ...	170	103	273	18 „	126	111	237
				19 „	167	124	291
Total under one month ...	1,988	1,422	3,410				
1 month and under 2 ...	467	320	787	Total 15 years and under 20	612	510	1,122
2 months „ „ 3 ...	349	260	609				
3 „ „ „ 4 ...	295	273	568	20 years	142	155	297
4 „ „ „ 5 ...	275	250	525	21 „	139	135	274
5 „ „ „ 6 ...	222	206	428	22 „	168	131	299
6 „ „ „ 7 ...	226	184	410	23 „	146	152	298
7 „ „ „ 8 ...	194	163	357	24 „	134	154	288
8 „ „ „ 9 ...	161	135	296				
9 „ „ „ 10 ...	186	124	310	Total 20 years and under 25	729	727	1,456
10 „ „ „ 11 ...	123	112	235				
11 „ „ „ 12 ...	118	110	228	25 years	156	131	287
				26 „	153	143	296
Total under 1 year ...	4,604	3,559	5,163	27 „	165	162	327
1 year	754	626	1,380	28 „	162	185	347
2 years	273	293	566	29 „	148	164	312
3 „	176	170	346				
4 „	120	138	258	Total 25 years and under 30	784	785	1,569
Total under 5 years ...	5,927	4,786	10,713				
				30 years	159	157	316
5 years	109	110	219	31 „	126	113	239
6 „	95	80	175	32 „	149	167	316
7 „	68	67	135	33 „	164	136	300
8 „	95	69	164	34 „	149	155	304
9 „	81	65	146				
				Total 30 years and under 35	747	728	1,475
Total 5 years and under 10	448	391	839				
				35 years	181	160	341
10 years	86	58	144	36 „	169	160	329
11 „	57	44	101	37 „	161	156	317
12 „	71	54	125	38 „	206	202	408
13 „	78	66	144	39 „	195	181	376
14 „	81	64	145				
				Total 35 years and under 40	912	859	1,771
Total 10 years and under 15	373	296	659				

DEATHS AT SINGLE AGES AND IN AGE-GROUPS, 1909—Continued.

Ages.	Males.	Females.	Total.	Ages.	Males.	Females.	Total
40 years	289	161	450	75 years	465	360	825
41 „	183	131	314	76 „	395	316	711
42 „	250	183	433	77 „	377	270	647
43 „	205	156	361	78 „	421	269	690
44 „	247	157	404	79 „	400	248	648
Total 40 years and under 45	1,174	788	1,962	Total 75 years and under 80	2,058	1,463	3,521
45 years	329	179	508	80 years	320	235	555
46 „	245	172	417	81 „	235	156	391
47 „	288	143	431	82 „	276	151	427
48 „	320	152	472	83 „	233	154	387
49 „	288	181	469	84 „	233	167	400
Total 45 years and under 50	1,470	827	2,297	Total 80 years and under 85	1,297	863	2,160
50 years	375	174	549	85 years	186	139	325
51 „	220	110	330	86 „	129	112	241
52 „	316	164	480	87 „	124	85	209
53 „	276	147	423	88 „	105	97	202
54 „	304	132	436	89 „	89	68	157
Total 50 years and under 55	1,491	727	2,218	Total 85 years and under 90	633	501	1,134
55 years	278	138	416	90 years	75	71	146
56 „	292	130	422	91 „	43	37	80
57 „	247	135	382	92 „	24	27	51
58 „	280	164	444	93 „	31	21	52
59 „	263	150	413	94 „	23	20	43
Total 55 years and under 60	1,360	717	2,077	Total 90 years and under 95	196	176	372
60 years	322	195	517	95 years	14	7	21
61 „	197	140	337	96 „	7	6	13
62 „	274	180	454	97 „	10	2	12
63 „	294	192	486	98 „	6	10	16
64 „	313	183	496	99 „	2	5	7
Total 60 years and under 65	1,400	890	2,290	Total 95 yrs. and under 100	39	30	69
65 years	426	252	678	100 years	3	6	9
66 „	329	228	557	101 „	1	2	3
67 „	330	236	566	102 „	1	3	4
68 „	381	272	653	106 „	1	...	1
69 „	333	244	577	109 „	1	1	2
				110 „	1	...	1
Total 65 years and under 70	1,799	1,232	3,031				
70 years	424	281	705	Total 100 years and over...	8	12	20
71 „	336	197	533				
72 „	407	276	683				
73 „	440	309	749	Age not stated	57	11	68
74 „	393	286	679				
Total 70 years and under 75	2,000	1,349	3,349	Total all ages	25,514	18,658	44,172

10. **Deaths of Centenarians, 1909.**—Particulars as to the twenty persons who died in 1909, aged 100 years and upwards, are given in the following table. It must, of course, be understood that while the Registrars-General of the various States take the greatest care to have statements as to abnormally high ages verified as far as possible, no absolute reliance can be placed on the accuracy of the ages shewn, owing to the well-known tendency of very old people to overstate their ages. The fact must not be lost sight of in connection with this question, that while parish registers in the United Kingdom often date very far back, compulsory registration of births dates practically only from 1874, the Act passed in 1836 having left many loop-holes open for those unwilling to register the births of their children.

DEATHS OF CENTENARIANS, 1909.

COMMONWEALTH.

Age	Locality where Death occurred.	State.	Cause of Death.	Occupation.	Birth Place.	Length of Residence in Commonwealth.
			MALES.			
Yrs						
110	Warrnambool ...	Victoria ...	Senile decay	Labourer	Ireland ...	53 years
109	Cobar	N.S.W. ...	,, ...	Painter ...	Canada ...	80 ,,
106	Scone	,, ...	Heart disease ...	Labourer...	Ireland ...	54 ,,
102	Sorell	Tasmania...	Senile decay	,, ...	England ...	Not stated
101	Bendigo	Victoria ...	Intestinal obstruction	Not stated	China ...	57 years
100	Burwood	N.S.W. ...	Senile decay	Labourer...	Ireland ...	55 ,,
100	Oakleigh	Victoria ...	,, ...	Not stated	,, ...	73 ,,
100	Claremont ...	W. Aust. ...	,, ...	Sawyer ...	England ...	54 ,,
			FEMALES.			
109	Randwick	N.S.W. ...	Chronic bronchitis ...	...	Ireland ...	53 years
102	Stanley	Queensland	Fractured femur and shock	...	England ...	60 ,,
102	Mosman	N.S.W. ...	Senile decay	...	,, ...	25 ,,
101	Woonona	,, ...	,, ...	...	Ireland ...	99 ,,
101	Timor	Victoria ...	,, ...	...	England ...	69 ,,
101	Bendigo	,, ...	,, ...	...	Ireland ...	71 ,,
100	Brewarrina ...	N.S.W. ...	,, ...	...	N.S.W. ...	Native
100	Maclean	,, ...	,, ...	...	Scotland ...	72 years
100	Cargo	,, ...	,, ...	...	Ireland ...	56 ,,
100	Richmond ...	Victoria ...	,, ...	...	England ...	53 ,,
100	Bellarine	,, ...	,, ...	...	Scotland ...	60 ,,
100	Maryborough ...	,, ...	,, ...	...	Ireland ...	Not stated

11. Length of Residence in the Commonwealth of Persons who Died in 1909.—The length of residence in the Commonwealth of all persons whose deaths were registered in the year 1909 has been tabulated for all the States, and a summary of the results is shewn below :—

LENGTH OF RESIDENCE IN COMMONWEALTH OF PERSONS WHO DIED IN 1909.

Length of Residence.	Male Deaths.	Female Deaths.	Total Deaths.	Length of Residence.	Male Deaths.	Female Deaths.	Total Deaths.
Born in the C'wealth...	13,350	11,538	24,888	Resident 25 to 29 years	920	465	1,385
Resident under 1 year	221	46	267	,, 30 to 34 ,,	816	375	1,191
,, 1 year ...	81	35	116	,, 35 to 39 ,,	511	298	809
,, 2 years ...	46	22	68	,, 40 to 44 ,,	958	539	1,497
,, 3 ,, ...	50	6	56	,, 45 to 49 ,,	908	694	1,602
,, 4 ,, ...	37	8	45	,, 50 to 54 ,,	1,817	1,383	3,200
,, 5 ,, ...	35	16	51	,, 55 to 59 ,,	1,487	1,132	2,619
,, 6 ,, ...	20	10	30	,, 60 to 64 ,,	485	429	914
,, 7 ,, ...	38	19	57	,, 65 yrs. & over	376	344	720
,, 8 ,, ...	32	19	51	Length of residence not stated... ...	2,031	681	2,712
,, 9 ,, ...	33	13	46				
,, 10 to 14 years...	226	71	297				
,, 15 to 19 ,, ...	274	141	415				
,, 20 to 24 ,, ...	762	374	1,136	Total	25,514	18,658	44,172

12. **Birthplaces of Persons who Died in 1909.**—In the following table are shewn the birthplaces of persons whose deaths were registered in 1909 :—

BIRTHPLACES OF PERSONS WHO DIED IN 1909.

COMMONWEALTH.

Birthplaces.	Males.	Females.	Total.
New South Wales ...	5,085	4,474	9,559
Victoria	4,206	3,530	7,736
Queensland ...	1,366	1,165	2,531
South Australia ...	1,269	1,125	2,394
Western Australia ...	571	497	1,068
Tasmania	853	747	1,600
New Zealand ...	85	68	153
Austria-Hungary ...	47	3	50
Belgium	6	1	7
Channel Islands ...	22	12	34
Denmark	86	19	105
England	5,115	3,069	8,184
Finland	20	2	22
France	71	15	86
Germany	574	243	817
Gibraltar	6	...	6
Greece	9	2	11
Ireland	2,654	2,334	4,988
Isle of Man ...	6	4	10
Italy	64	14	78
Malta	7	1	8
Netherlands ...	19	...	19
Norway	60	3	63
Portugal	7	1	8
Rumania	2	...	2
Russia	30	8	38
Scotland	1,475	940	2,415
Spain	7	1	8
Sweden	97	9	106
Switzerland ...	51	7	58
Turkey	1	...	1
Wales	128	47	175
Bermudas	...	1	1
Canada	50	13	63
Newfoundland ...	4	...	4
United States ...	102	19	121
West Indies ...	19	10	29
Argentine	...	1	1
Brazil	2	...	2
British Guiana ...	1	...	1
Peru	...	1	1
S. America (so desc'bd)	4	1	5

Birthplaces.	Males.	Females.	Total.
Afghanistan ...	2	...	2
Arabia	1	1	2
Asia Minor ...	...	1	1
Burmah	1	1	2
Ceylon	6	1	7
China	348	4	352
Dutch East Indies ...	20	...	20
India	100	22	122
Japan	48	1	49
Malay States ...	7	...	7
Persia	1	...	1
Philippine Islands ...	12	...	12
Straits Settlements...	10	...	10
Syria	5	1	6
Africa (so described)	1	...	1
Ascension Island ...	...	1	1
Azores	3	...	3
Cape of Good Hope ...	3	1	4
Cape Verde Islands...	1	...	1
Mauritius	5	2	7
Natal	1	...	1
Seychelles	1	...	1
S. Africa (so described)	14	10	24
St. Helena ...	2	...	2
W. Africa (so desc'bd)	2	...	2
Zanzibar	1	...	1
Fiji	3	3	6
Hawaii	2	...	2
New Caledonia ...	4	...	4
New Guinea ...	13	...	13
New Hebrides ...	2	1	3
Norfolk Island ...	2	2	4
Samoa	1	...	1
Society Islands ...	1	1	2
Solomon Islands ...	2	...	2
S. Sea Is. (so described)	39	1	40
At Sea	49	30	79
Not stated... ...	620	187	807
Total Deaths ...	25,514	18,658	44,172

13. **Occupations of Male Persons who Died in 1909.**—Information as to the occupations of the 25,514 males who died in the Commonwealth in 1909, is contained in the following statement:—

OCCUPATIONS OF DECEASED MALES, 1909.

COMMONWEALTH.

Occupation.	No. of Deaths.
CLASS I.—PROFESSIONAL.	
General Government	109
Local Government	40
Defence	62
Law and order	190
Religion	86
Charity	1
Health	124
Literature	37
Science	11
Civil and mechanical engineering, architecture and surveying	84
Education	110
Fine arts	36
Music	31
Amusements	62
Total Professional	983
CLASS II.—DOMESTIC.	
Hotelkeepers and assistants	260
Others engaged in providing board and lodging	32
House servants	134
Coachmen and grooms	74
Hairdressers	47
Laundrymen	6
Others engaged in domestic occupations	76
Total Domestic	629
CLASS III.—COMMERCIAL.	
Banking and finance	77
Insurance and valuation	54
Land and household property	31
Property rights not elsewhere classed	1
Books, publications and advertising	27
Prints, pictures, etc.	1
Machines, tools, and implements	1
Carriages and vehicles	1
Furniture	4
Paper and stationery	10
Textile fabrics	126
Dress	13
Animal food	233
Vegetable food	55
Groceries, drinks, narcotics, and stimulants	142
Living animals	48
Leather, hides, etc.	3
Wool and tallow	14
Hay, corn, etc.	34
Timber	14
Wood and coal	28
Glass and earthenware	6
Gold, silver, and precious stones	1
Ironmongery	25
Merchants, etc.	224
Dealers and hawkers	87
Agents and brokers	91
Clerks, bookkeepers, etc.	438
Commercial travellers and salesmen	161
Others engaged in commercial pursuits	62
Speculators on chance events	12
Storage	2
Total Commercial	2,026
CLASS IV.—TRANSPORT AND COMMUNICATION.	
Railway traffic	326
Tramway traffic	41
Road traffic	371
Sea and river traffic	526
Postal service	52
Telegraph and telephone service	28
Messengers, etc.	10
Total Transport & Communication	1,354
CLASS V.—INDUSTRIAL.	
Books and publications	108
Musical instruments	9
Prints, pictures, and art materials	15
Ornaments and small wares	22
Designs, medals and type	5
Watches and clocks	27
Surgical instruments	1
Arms and ammunition	4
Engines, machines, tools, etc.	86
Carriages and vehicles	90
Harness, saddlery, and leatherware	74
Ships, boats, and equipment	52
Furniture	93
Building material	52
Chemicals	4

OCCUPATIONS OF DECEASED MALES, 1909—Continued.

Occupation.	No. of Deaths.	Occupation.	No. of Deaths.
Textile fabrics	14	CLASS VI.—AGRICULTURAL, PASTORAL, MINING PURSUITS, ETC.	
Dress	339	Agricultural	2,583
Fibrous materials	13	Pastoral	648
Animal food	17	Dairying	94
Vegetable food	178	Fisheries, capture or destruction of wild animals, or acquisition of products yielded thereby ...	143
Groceries, drinks, narcotics, and stimulants	56	Forestry	70
Wool-scouring, soap, and candles	52	Water conservation and supply ...	17
Workers in wood not elsewhere classed	6	Mines and quarries	1,706
Paper	2		
Stone, clay, glass	70	Total Primary Producers ...	5,261
Jewellery and precious stones ...	31		
Metals, other than gold and silver	313	CLASS VII.—INDEFINITE.	
Gas, electric lighting	28	Independent means, etc. ...	800
Buildings—		Undefined or unknown	560
Builders	78		
Stonemasons...	76	Total Indefinite	1,360
Bricklayers	75		
Carpenters	457	CLASS VIII.—DEPENDENTS.	
Slaters, shinglers	3	Dependent relatives (including persons under 20 years of age with no specified occupation) ...	6,965
Plasterers	49	Dependent upon the State or upon public or private support ...	169
Painters and glaziers	155		
Plumbers	77	Total Dependents	7,134
Others	12		
Roads, railways, and earthworks ...	36		
Disposal of the dead	15		
Disposal of refuse	23		
Other industrial workers—			
Manufacturers	17		
Engineers, firemen	328		
Machinists	5		
Contractors	163		
Labourers, undefined	3,437		
Total Industrial	6,767	Total Male Deaths	25,514

14. **Index of Mortality.**—The death rates so far shewn are crude rates, *i.e.*, they simply shew the number of deaths per thousand of mean population, without taking the age constitution of that population into consideration. It is, however, a well-known fact that the death rate and age constitution of a people are intimately related, thus, other conditions being equal, the death rate of a country will be lower if it contain a large percentage of young people (not infants). In order to have a comparison of the mortality of various countries on a uniform basis, so far as age constitution is concerned, the International Statistical Institute in its 1895 session recommended the universal adoption of the population of Sweden in five age-groups, as ascertained at the Census of 1890, as the standard population by which this "Index of Mortality," as distinguished from the crude death rate, should be ascertained. The calculation for 1909 is shewn below for each of the six States and for the Commonwealth, but it will be understood that the distribution of the mean population of 1909 into age-groups according to the distribution as found at the Census of 1901 must be taken as the best approximation which the data will admit of, not as absolutely correct:—

(*a*) **INDEX OF MORTALITY, 1909.**—(STATES AND COMMONWEALTH.)

Age-Group.	Mean Population, 1909, distributed according to Results of Census of 1901.	Number of Deaths, 1909.	No. of Deaths per 1000 of Mean Population, 1909, in each Age-Group.	Age Distribution per 1000 of Standard Population.	Index of Mortality.
NEW SOUTH WALES.					
Under 1 year	40,484	3,234	79.88	25.5	2.04
1 year and under 20	704,050	1,960	2.78	398.0	1.11
20 years „ 40	514,932	2,251	4.37	269.6	1.18
40 „ „ 60	256,586	2,965	11.56	192.3	2.22
60 „ and upwards	89,811	5,400	60.13	114.6	6.89
Total	1,605,863	15,810	9.85	1,000.0	13.44
VICTORIA.					
Under 1 year	30,298	2,251	74.30	25.5	1.90
1 year and under 20	534,424	1,480	2.77	398.0	1.10
20 years „ 40	420,706	1,779	4.23	269.6	1.14
40 „ „ 60	196,798	2,701	13.72	192.3	2.64
60 „ and upwards	102,482	6,225	60.74	114.6	6.96
Total	1,284,708	14,436	11.24	1,000.0	13.74
QUEENSLAND.					
Under 1 year	14,597	1,112	76.18	25.5	1.94
1 year and under 20	245,108	725	2.96	398.0	1.18
20 years „ 40	187,170	855	4.57	269.6	1.23
40 „ „ 60	90,937	1,178	12.95	192.3	2.49
60 „ and upwards	27,338	1,660	60.72	114.6	6.96
Total	565,150	5,530	9.79	1,000.0	13.80
SOUTH AUSTRALIA.					
Under 1 year	9,268	616	66.47	25.5	1.70
1 year and under 20	182,307	363	1.99	398.0	0.79
20 years „ 40	125,594	595	4.74	269.6	1.28
40 „ „ 60	67,463	780	11.56	192.3	2.22
60 „ and upwards	26,050	1,496	57.43	114.6	6.58
Total	410,682	3,850	9.37	1,000.0	12.57
WESTERN AUSTRALIA.					
Under 1 year	7,398	593	80.16	25.5	2.04
1 year and under 20	90,029	399	4.43	398.0	1.76
20 years „ 40	123,211	526	4.27	269.6	1.15
40 „ „ 60	41,456	631	15.22	192.3	2.93
60 „ and upwards	8,851	555	62.70	114.6	7.19
Total	270,945	2,704	9.98	1,000.0	15.07
TASMANIA.					
Under 1 year	4,919	357	72.58	25.5	1.85
1 year and under 20	83,147	243	2.92	398.0	1.16
20 years „ 40	57,455	280	4.87	269.6	1.31
40 „ „ 60	27,433	319	11.63	192.3	2.24
60 „ and upwards	11,209	643	57.36	114.6	6.58
Total	184,163	1,842	10.00	1,000.0	13.14
COMMONWEALTH.					
Under 1 year	106,964	8,163	76.32	25.5	1.94
1 year and under 20	1,839,065	5,170	2.81	398.0	1.12
20 years „ 40	1,429,068	6,286	4.40	269.6	1.19
40 „ „ 60	680,673	8,574	12.60	192.3	2.42
60 „ and upwards	265,741	15,979	60.13	114.6	6.89
Total	4,321,511	44,172	10.22	1,000.0	13.56

NOTE.—The small number of persons whose ages were not ascertained at the 1901 Census have been proportionately distributed among the various age-groups, and the same plan has been followed in regard to the 68 persons who died in 1909, and whose ages were not stated in the certificates of death.

It will be seen that the States and the Commonwealth remain in the same order with one exception—while the crude death rate was third highest in Western Australia, and highest in Victoria, the index of mortality was highest in Western Australia and

third highest in Victoria. Tasmania has the second highest crude rate and the second lowest index, while Queensland has the second lowest crude rate and the second highest index. South Australia has both the lowest crude rate and the lowest index, and New South Wales the third lowest crude rate and the third lowest index. The range of the indexes is generally rather wider than that of the crude death rates, thus, while the latter in 1909 rose from 9.37 per thousand in South Australia to 11.24 per thousand in Victoria, a range of 1.87 per thousand, the indexes varied from 12.57 per thousand in South Australia to 15.07 per thousand in Western Australia, a range of 2.50 per thousand. In 1907 the range of the crude rates was only 1.81 per thousand as compared with a range of 2.33 per thousand for the indexes, while in 1908 the range of the crude rates was 2.69, and that of the indexes only 2.65 per thousand.

For the purpose of comparison with previous years the index of mortality is shewn in the following table for each of the Commonwealth States for the years 1902 to 1909:—

(*b*) **INDEX OF MORTALITY, 1902 to 1909.**—(STATES.)

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.
1902	15.45	15.89	15.85	15.12	17.66	14.26
1903	15.06	15.25	16.22	13.89	15.75	14.86
1904	14.10	14.29	13.23	13.32	15.60	14.36
1905	13.53	14.55	14.53	13.52	14.41	13.36
1906	13.44	15.05	13.20	13.94	16.51	14.87
1907	14.31	14.40	14.60	13.33	15.66	14.87
1908	13.88	15.24	14.56	13.15	15.80	15.34
1909	13.44	13.74	13.80	12.57	15.07	13.14

A comparison of the above figures with the crude death rates given on a previous page shews that while the crude death rate was highest in Victoria for seven out of the eight years, and in Western Australia in one year, and lowest five times in South Australia, twice in Queensland, and once in Tasmania, the index of mortality was highest in Western Australia six times, in Victoria once, and in Queensland once, and lowest four times in South Australia, twice in Queensland, and twice in Tasmania. The crude death rates shew the following ranges:—In New South Wales, 2.13; in Victoria, 2.12; in Queensland, 2.82; in South Australia, 2.46; in Western Australia, 3.73; and in Tasmania, 1.92 per thousand; while the fluctuations in the indexes amounted to 2.01 per thousand in New South Wales; to 2.15 in Victoria; to 3.02 in Queensland; to 2.55 in South Australia; to 3.25 in Western Australia; and to 2.20 in Tasmania.

15. **Causes of Death.**—(i.) *Changes in Classification from 1903 to 1906.* The causes of death were classified in all the States of the Commonwealth to the end of 1903 according to the system originally devised by Dr. William Farr, and modified in 1886 by Dr. William Ogle. A conference of the State Statisticians, held at Hobart in January, 1902, decided to substitute for that system the classification adopted since 1901 by the Registrar-General of England. While New South Wales, Queensland, and Tasmania remodelled their vital statistics on that plan, Victoria, South Australia, and Western Australia continued to tabulate according to the Farr-Ogle system, and a comparison of the causes of death in the six States during the years 1903, 1904, 1905, and 1906 is, therefore, a matter of extreme difficulty. The differences in tabulation will be seen in the following statement:—

TABULATION OF CAUSES OF DEATH.

State.	1902.	1903.	1904.	1905.	1906.	State.	1902.	1903.	1904.	1905.	1906.
N.S.W. ...	Old	Old	Old	New	International	S. Australia	Old	Old	Old	Old	Old
Victoria ...	Old	Old	Old	Old	Old	W. Australia	Old	Old	Old	Old	Old
Queensland	Old	New	New	New	New	Tasmania ...	Old	New	New	New	New

Old= Farr-Ogle classification. New= New classification by Registrar-General of England. International—See next paragraph.

(ii.) *The Classification of the International Institute of Statistics.* At a conference held in Melbourne in November and December, 1906, the Commonwealth Statistician recommended the adoption of the classification of the International Institute of Statistics, generally known as the Bertillon Index, and after some discussion that recommendation was accepted, a course which has met with wide approval in medical circles. This index, as the one used by the Registrar-General of England, is based on the original Farr-Ogle classification, but approximates more closely to the present English system than to the older one. The chief advantage possessed by the international classification is that it presents a very extensive field for comparison, the countries which have adopted it representing a population which is probably not less than 150,000,000. Provision is made for a decennial revision of the classification, as it has been recognised that finality is impossible in the present state of medical science. The committee charged with the first revision met in Paris in July, 1909, and a number of recommendations were, in accordance with a resolution of the Australasian Medical Congress, held in Melbourne in October, 1908, made to it, dealing particularly with tropical diseases occurring in the northern parts of Australia. Most of these recommendations, together with many others, have been adopted. A full statement of what has been done must be deferred until the next issue of this Year Book, when the Vital Statistics of the Commonwealth for the year 1910 will be shewn in accordance with the revised classification.

The detailed classification groups causes of death under 179 (increased to 189 by the revised classification) different headings in fourteen categories, as follows:—

i. General Diseases.
ii. Diseases of the Nervous System and Organs of Special Sense.
iii. Diseases of the Circulatory System.
iv. Diseases of the Respiratory System.
v. Diseases of the Digestive System.
vi. Diseases of the Genito-urinary System and Adnexa.
vii. Puerperal Condition.
viii. Diseases of the Skin and Cellular Tissue.
ix. Diseases of the Organs of Locomotion.
x. Malformations.
xi. Infancy.
xii. Old Age.
xiii. Violence.
xiv. Ill-defined Diseases.

(iii.) *Compilation of Vital Statistics for 1907, 1908, and 1909 in Commonwealth Bureau.* The vital statistics of the six Commonwealth States for 1907, 1908, and 1909 have been tabulated according to this classification in the Commonwealth Bureau, and the system is being employed in the majority of the State offices in the preparation of their monthly and quarterly bulletins of vital statistics.

(iv.) *Classification of Causes of Death, 1905 to 1909, according to Abridged Bertillon Index.* An abridged classification, which enumerates thirty-five diseases and groups of diseases (increased to thirty-eight by the revised classification) is in use in many European and American States, and while the Commonwealth Statistics for 1907, 1908, and 1909 have been compiled on the detailed classification of 179 headings, it was at least possible to group the causes of death experienced in 1905 and 1906 under the 35 headings of the abridged classification. Two slight modifications had to be made in the tabulation of those two years, viz., in No. 31, Congenital Debility and Malformations, only children under three months, who died of congenital debility, should have been included. The age limit had here to be extended to 12 months, as in the majority of States the causes of death were only tabulated for the group "under one year." For the same reason, the very few cases of "Insufficient Nourishment of Infants," No. 153 of detailed, and No. 34 of abridged classification, had to be included with No. 173, "Inanition," of detailed, and No. 33 of abridged classification. Apart from the two cases mentioned, and certain minor difficulties mentioned in paragraph 16 hereinafter,

it is believed that all the causes of death enumerated either under the Farr-Ogle, or under the Registrar-General's classification, have been grouped under the correct headings of the abridged Bertillon Index. The compilations for 1907, 1908, and 1909 do not labour under those defects. They will be found in full in "Bulletins Nos. 8, 14, and 20 of Population and Vital Statistics"; here it will suffice to give the abridged classification under thirty-five headings for the year 1909 :—

CAUSES OF DEATH.—COMMONWEALTH, 1909.

(*a*) MALES.

Cause.	N.S.W.	Vic.	Q'land.	S.Aust.	W.Aus.	Tas.	C'wlth.
1 Typhoid Fever	167	76	68	23	48	24	406
2 Typhus	—	—	—	—	—	—	—
3 Intermittent Fever and Malarial Cachexia	3	1	24	19	2	—	49
4 Small-pox	—	—	—	—	1	—	1
5 Measles	7	1	1	1	3	2	15
6 Scarlet Fever	9	18	—	—	—	—	27
7 Whooping Cough	7	76	17	10	2	1	113
8 Diphtheria and Croup	96	54	28	6	37	4	225
9 Influenza	53	53	39	15	11	8	179
10 Asiatic Cholera	—	—	—	—	—	—	—
11 Cholera Nostras	—	—	—	—	—	—	—
12 Other Epidemic Diseases ...	45	22	31	14	40	2	154
13 Tuberculosis of the Lungs ...	582	595	210	166	123	64	1,740
14 Tuberculosis of the Meninges ...	32	48	5	9	8	10	112
15 Other forms of Tuberculosis ...	83	63	29	21	11	6	213
16 Cancer and other Malignant Tumours	600	529	191	156	97	53	1,626
17 Simple Meningitis	118	108	45	36	13	14	334
18 Congestion, Hæmorrhage, and Softening of the Brain	344	283	87	86	40	29	869
19 Organic Diseases of the Heart ...	775	801	282	198	130	71	2,257
20 Acute Bronchitis	113	51	30	27	10	7	238
21 Chronic Bronchitis	186	224	53	42	29	15	549
22 Pneumonia	377	357	144	77	62	89	1,106
23 Diseases of the Stomach (Cancer excepted)	50	53	13	15	9	3	143
24 Diarrhœa and Enteritis (children under two years only) ...	666	417	205	91	137	28	1,544
25 Hernia, Intestinal Obstructions ...	73	78	28	17	13	6	215
26 Cirrhosis of the Liver	75	70	31	21	9	5	211
27 Nephritis and Bright's Disease ...	376	358	144	113	60	25	1,076
28 Non-cancerous Tumours and other Diseases of the Female Genital Organs	—	—	—	—	—	—	—
29 Puerperal Septicæmia (Puerperal Fever, Puerperal Peritonitis, Puerperal Phlebitis)	—	—	—	—	—	—	—
30 Other Puerperal Accidents of Pregnancy and Confinement ...	—	—	—	—	—	—	—
31 Congenital Debility and Malformations	616	480	228	149	106	95	1,674
32 Senile Debility...	554	751	153	159	68	144	1,829
33 Violence	757	489	365	181	183	75	2,050
33A Suicide	146	97	85	31	32	7	398
34 Other Diseases...	1,960	1,795	835	390	327	173	5,480
35 Unspecified or Ill-defined Diseases	314	122	48	67	60	70	681
Total—Males	9,184	8,070	3,419	2,140	1,671	1,030	25,514

CAUSES OF DEATH—COMMONWEALTH, 1909.

(*b*) FEMALES.

Cause.	N.S.W.	Vic.	and.	S. Aus.	W.Aus.	Tas.	C'wlth.
1 Typhoid Fever	118	55	21	14	33	14	255
2 Typhus	—	—	—	—	—	—	—
3 Intermittent Fever and Malarial Cachexia	1	—	5	3		—	10
4 Small-pox	—	—	—	—	—	—	—
5 Measles	3	3	5	1	4	—	16
6 Scarlet Fever	21	24	1	—	—	1	47
7 Whooping Cough	9	97	28	8	2	—	144
8 Diphtheria and Croup	89	36	25	10	45	5	210
9 Influenza	54	51	24	6	8	4	147
10 Asiatic Cholera	—	—	—	—	—	—	—
11 Cholera Nostras	—	—	—	1	—	—	1
12 Other Epidemic Diseases ...	17	19	13	6	—	2	57
13 Tuberculosis of the Lungs ...	449	498	119	176	75	62	1,379
14 Tuberculosis of the Meninges ...	30	50	8	7	5	8	108
15 Other forms of Tuberculosis ...	66	58	11	16	10	8	169
16 Cancer and other Malignant Tumours	547	493	146	154	85	61	1,486
17 Simple Meningitis	91	84	32	47	11	17	282
18 Congestion, Hæmorrhage, and Softening of the Brain ...	306	272	86	73	25	34	796
19 Organic Diseases of the Heart ...	510	695	158	202	65	53	1,683
20 Acute Bronchitis	95	42	23	12	4	8	184
21 Chronic Bronchitis	117	144	31	35	7	14	348
22 Pneumonia	242	210	93	40	31	30	646
23 Diseases of the Stomach (Cancer excepted)	38	54	20	6	6	5	129
24 Diarrhœa and Enteritis (children under two years only) ...	534	299	187	81	127	31	1,259
25 Hernia, Intestinal Obstructions ...	57	68	21	18	10	7	181
26 Cirrhosis of the Liver	41	46	16	11	5	1	120
27 Nephritis and Bright's Disease ...	236	285	86	70	23	23	723
28 Non-cancerous Tumours and other Diseases of the Female Genital Organs	48	34	19	11	11	7	130
29 Puerperal Septicæmia (Puerperal Fever, Puerperal Peritonitis, Puerperal Phlebitis)	86	46	31	19	10	9	201
30 Other Puerperal Accidents of Pregnancy and Confinement ...	129	103	57	37	36	14	376
31 Congenital Debility and Malformations	477	345	156	102	92	59	1,231
32 Senile Debility	428	537	89	161	43	107	1,365
33 Violence	254	184	76	43	29	28	614
33A Suicide	45	27	8	10	4	3	97
34 Other Diseases...	1,316	1,415	486	292	192	157	3,858
35 Non-specified or Ill-defined Diseases	172	92	30	38	34	40	406
Total—Females	6,626	6,366	2,111	1,710	1,033	812	18,658

CAUSES OF DEATH—COMMONWEALTH, 1909.

(*c*) TOTAL, MALES AND FEMALES.

Cause.	N.S.W.	Vic.	Q'land.	S. Aust.	W.Aust.	Tas.	C'wlth.
1 Typhoid Fever	285	131	89	37	81	38	661
2 Typhus	—	—	—	—	—	—	—
3 Intermittent Fever and Malarial Cachexia	4	1	29	22	3	—	59
4 Small-pox	—	—	—	—	1	—	1
5 Measles	10	4	6	2	7	2	31
6 Scarlet Fever	30	42	1	—	—	1	74
7 Whooping Cough	16	173	45	18	4	1	257
8 Diphtheria and Croup ...	185	90	53	16	82	9	435
9 Influenza	107	104	63	21	19	12	326
10 Asiatic Cholera	—	—	—	—	—	—	—
11 Cholera Nostras	—	—	—	1	—	—	1
12 Other Epidemic Diseases ...	62	41	44	20	40	4	211
13 Tuberculosis of the Lungs	1,031	1,093	329	342	198	126	3,119
14 Tuberculosis of the Meninges	62	98	13	16	13	18	220
15 Other forms of Tuberculosis	149	121	40	37	21	14	382
16 Cancer and other Malignant Tumours	1,147	1,022	337	310	182	114	3,112
17 Simple Meningitis	209	192	77	83	24	31	616
18 Congestion, Hæmorrhage, and Softening of the Brain ...	650	555	173	159	65	63	1,665
19 Organic Diseases of the Heart	1,285	1,496	440	400	195	124	3,940
20 Acute Bronchitis	208	93	53	39	14	15	422
21 Chronic Bronchitis... ...	303	368	84	77	36	29	897
22 Pneumonia	619	567	237	117	93	119	1,752
23 Diseases of the Stomach (Cancer excepted)	88	107	33	21	15	8	272
24 Diarrhœa and Enteritis (children under two years only)	1,200	716	392	172	264	59	2,803
25 Hernia, Intestinal Obstructions	130	146	49	35	23	13	396
26 Cirrhosis of the Liver ...	116	116	47	32	14	6	331
27 Nephritis and Bright's Disease	612	643	230	183	83	48	1,799
28 Non-cancerous Tumours and other Diseases of the Female Genital Organs	48	34	19	11	11	7	130
29 Puerperal Septicæmia (Puerperal Fever, Puerperal Peritonitis, Puerperal Phlebitis)	86	46	31	19	10	9	201
30 Other Puerperal Accidents of Pregnancy and Confinement	129	103	57	37	36	14	376
31 Congenital Debility and Malformations	1,093	825	384	251	198	154	2,905
32 Senile Debility	982	1,288	242	320	111	251	3,194
33 Violence	1,011	673	441	224	212	103	2,664
33A Suicide	191	124	93	41	36	10	495
34 Other Diseases	3,276	3,210	1,321	682	519	330	9,338
35 Non-specified or Ill-defined Diseases	486	214	78	105	94	110	1,087
Total—Males and Females...	15,810	14,436	5,530	3,850	2,704	1,842	44,172

(*d*) The classification for the years 1905, 1906, 1907, and 1908 is shewn for the Commonwealth in the following table, and for purposes of comparison the figures for the year 1909 have been repeated from the preceding table. Male and female deaths for 1905, 1906, and 1907 are shewn separately on page 237 of the second issue and those for 1908 on pages 211 and 212 of the third issue of this Year Book, while the figures for 1909 are given on the two preceding pages :—

CAUSES OF DEATH.—COMMONWEALTH, 1905 to 1909.

MALES AND FEMALES.

Cause.	1905.	1906.	1907.	1908.	1909.
1 Typhoid Fever	630	738	564	736	661
2 Typhus	...	1	...	...	...
3 Intermittent Fever & Malarial Cachexia	55	38	42	52	59
4 Small-pox	...	...	...	...	1
5 Measles	113	39	147	125	31
6 Scarlet Fever	44	61	37	63	74
7 Whooping Cough	42	293	1,070	249	257
8 Diphtheria and Croup	314	280	403	421	435
9 Influenza...	428	539	902	588	326
10 Asiatic Cholera	...	...	...	...	...
11 Cholera Nostras	5	209	5	4	1
12 Other Epidemic Diseases	597	354	268	258	211
13 Tuberculosis of the Lungs	3,244	3,222	3,166	3,367	3,119
14 Tuberculosis of the Meninges ...	290	273	237	205	220
15 Other forms of Tuberculosis ...	498	547	455	394	382
16 Cancer and other Malignant Tumours	2,742	2,772	2,940	2,921	3,112
17 Simple Meningitis...	461	250	648	676	616
18 Congestion, Hæmorrhage, and Softening of the Brain...	1,611	1,685	1,901	1,867	1,665
19 Organic Diseases of the Heart ...	1,449	2,502	3,801	4,066	3,940
20 Acute Bronchitis	478	421	514	412	422
21 Chronic Bronchitis	1,023	984	844	818	897
22 Pneumonia	2,362	2,289	1,788	1,871	1,752
23 Diseases of the Stomach (Cancer excepted)...	442	467	334	308	272
24 Diarrhœa & Enteritis (Children under two years only)	2,593	2,881	2,733	3,236	2,803
25 Hernia, Intestinal Obstructions ...	432	399	411	389	396
26 Cirrhosis of the Liver	290	267	325	362	331
27 Nephritis and Bright's Disease ...	1,773	1,792	1,760	1,864	1,799
28 Non-cancerous Tumours and other Diseases of the Female Genital Organs...	134	153	128	159	130
29 Puerperal Septicæmia (Puerperal Fever, Puerperal Peritonitis, Puerperal Phlebitis)	205	168	179	202	201
30 Other Puerperal Accidents of Pregnancy and Confinement	411	458	435	404	376
31 Congenital Debility and Malformations	3,200	2,960	3,038	2,973	2,905
32 Senile Debility	3,160	3,031	3,136	3,466	3,194
33 Violence	2,663	2,617	2,679	2,922	2,664
33A Suicide	520	499	461	497	495
34 Other Diseases	10,263	9,976	8,679	9,289	9,338
35 Unspecified or Ill-defined Diseases ...	1,042	1,168	1,275	1,262	1,087
Total	43,514	44,333	45,305	46,426	44,172

16. **Certification of Deaths.**—Information was obtained in 1909 as to the persons by whom the 44,172 deaths which occurred in the Commonwealth were certified. The result of the enquiry shews that approximately 87.7 per cent. (in 1908, 87.3 per cent.) were certified by medical practitioners, and 11.5 per cent. (in 1908, 11.5 per cent.) by coroners after inquests, or magisterial enquiries, while in 0.8 per cent. (in 1908, 1.2 per cent.) of the cases there was either no certificate given, or particulars were not forthcoming. The results are shewn in detail in Bulletin No. 20; a short summary will therefore suffice here :—

CERTIFICATION OF DEATHS, COMMONWEALTH, 1909.

Death Certified by—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Cwlth.
Medical practitioner ...	13,751	12,591	4,940	3,402	2,373	1,663	38,720
Coroner	2,025	1,834	354	418	293	164	5,088
Not certified or not stated ...	34	11	236	30	38	15	364
Total Deaths	15,810	14,436	5,530	3,850	2,704	1,842	44,172

Of the cases certified by coroners, violent deaths numbered 2415, ill-defined causes 365, organic heart disease 406, senile decay 343, congenital debility 175, diarrhœa and enteritis 96, Bright's disease 89, congestion and hæmorrhage of brain 123, tuberculosis of lungs 113, pneumonia 104, infantile convulsions 72, broncho-pneumonia 48, diseases of arteries, aneurisms, etc. 47, and acute and chronic alcoholism 36; a total of 4432 out of 5088.

Of uncertified causes of death, violent deaths numbered 41, senile debility 41, ill-defined causes 50, infantile convulsions 42, congenital debility 43, diarrhœa and enteritis 8, tuberculosis of the lungs 7, organic heart disease 12, and pneumonia 13; a total of 257 out of 364.

17. **Deaths from Special Causes.**—The table on p. 203 furnishes comparisons for the last five years only, and comparisons will, therefore, be restricted to that period.

(i.) *Typhoid Fever.* Deaths from typhoid fever were more numerous in 1908 than in either 1905 or 1907, and about the same as in 1906, numbering 736, against 630 in 1905, 738 in 1906, and 564 in 1907. In 1909 the number fell to 661, of which 285 occurred in New South Wales, 131 in Victoria, 89 in Queensland, 37 in South Australia, 81 in Western Australia, and 38 in Tasmania.

(ii.) *Typhus.* The death of one woman was registered in 1906 in Victoria as being due to typhus, but this registration may have been due to an error in the death certificate, and the death may possibly have been one of typhoid (enteric) fever.

(iii.) *Intermittent Fever and Malarial Cachexia.* Deaths from malarial diseases are practically confined to the tropical districts of Northern Queensland and Western Australia, and to the Northern Territory, 29 out of 59 deaths registered in 1909 having occurred in Queensland, and 22 in the Northern Territory.

(iv.) *Small-pox.* No deaths from small-pox occurred during the four years 1905 to 1908, but in 1909 one death was registered in Western Australia, the patient having developed the disease on board ship during the journey from India.

(v.) *Measles.* No serious epidemic of measles has occurred for several years; the deaths in 1908 were, however, slightly more numerous than in 1905 and 1906, but less numerous than in 1907, numbering 125, against 113, 39 and 147 respectively. In 1909 the deaths numbered 31, and were distributed among all the six States.

(vi.) *Scarlet Fever.* 74 deaths were registered in 1909, 30 of which occurred in New South Wales, and 42 in Victoria.

(vii.) *Whooping Cough.* A rather severe epidemic of whooping cough visited New South Wales in the early part of 1907, causing 592 deaths out of a total of 1070 registered in the Commonwealth. The number of deaths in Victoria was 130; in Queensland, 127;

in South Australia, 76; in Western Australia, 97; and in Tasmania, 48. The deaths in 1905 numbered only 42, in 1906, 293, and in 1908 fell to 249, with a slight increase to 257 in 1909.

(viii.) *Diphtheria and Croup.* Deaths in 1905 numbered 314; in 1906, 280; in 1907, 403; in 1908, 421, and in 1909, 435, of which 185 occurred in New South Wales, 90 in Victoria, and 82 in Western Australia.

(ix.) *Influenza.* This disease was rather more prevalent in 1907 than in the two previous years, the deaths numbering 902, against 428 and 539. Of the deaths occurring in 1907, 309 were registered in New South Wales, 275 in Victoria, and 209 in Queensland. The deaths in 1908 were 588, and in 1909, 326, of which 107 occurred in New South Wales, 104 in Victoria, and 63 in Queensland.

(x.) *Asiatic Cholera.* No cases of Asiatic cholera have ever occurred in the Commonwealth.

(xi.) *Cholera Nostras.* Isolated cases only of choleriform diarrhœa occurred in each of the five years with the exception of 1906, when the deaths recorded amounted to 209.

(xii.) *Other Epidemic Diseases.* The number of deaths registered under this heading was 597 in 1905, 354 in 1906, 268 in 1907, 258 in 1908, and 211 in 1909. The list in 1909 includes the following diseases:—Dysentery, 85; plague, 13 (of which 7 in New South Wales, 1 in Queensland, 4 in South Australia, and 1 in Western Australia); erysipelas, 52; miliary fever, 1, other epidemic diseases, 60.

(xiii.) *Tuberculosis of the Lungs.* The deaths in 1909 numbered 3119, viz., 1740 males and 1379 females. The figures for 1905, 1906, 1907, and 1908 were 3244, 3222, 3166, and 3367 respectively. Of the deaths in 1909, 1031 occurred in New South Wales, 1093 in Victoria, 329 in Queensland, 342 in South Australia, 198 in Western Australia, and 126 in Tasmania.

(xiii.*a*) *Tuberculosis of the Respiratory System.* Of the various forms of tuberculosis prevalent in the Commonwealth, that which has probably attracted the most attention and has been the subject of the widest comment is phthisis, or tuberculosis of the lungs. The intimate relation, however, between tuberculosis of the lungs and that of other parts of the respiratory system renders it desirable that all forms of tuberculosis of the respiratory system should be brought under one head for various investigations concerning the age incidence and duration of this disease. A preliminary investigation of these two phases has been made by the Commonwealth Statistical Bureau, but owing to the paucity of the data and their incompleteness in certain particulars the results obtained, so far as duration is concerned, can be considered as tentative only, and cannot be regarded as sufficiently reliable to warrant their inclusion in an official Year Book.

In the matter of the age incidence of death from tuberculosis of the respiratory system, more satisfactory data are obtainable, and the diagrams given hereunder furnish graphic representation of the frequency of deaths at successive ages in England and Wales during 1906 (Fig. 1), and in the Commonwealth during 1907 (Fig. 2). The figures for the Commonwealth being insufficient in extent to admit of an exact determination of the age incidence of death for the first five years, the English results have been made use of in deciding the form of this portion of the curve.

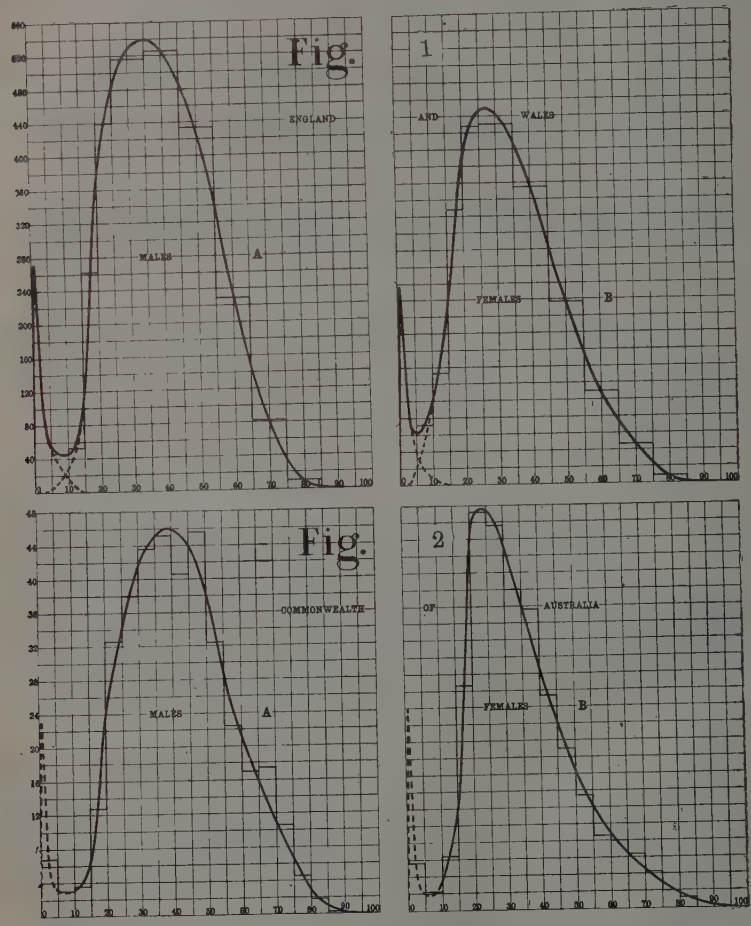
The figures shewn at the foot of each graph denote the respective ages at death, while the figures shewn in the margin denote the number of deaths corresponding to each year of age. In each of the graphs various rectangles are shewn, through the upper parts of which smooth curves have been drawn. The areas of these rectangles represent the number of deaths which occurred between the ages indicated at the extremities of their respective bases, the scale being 100 persons for each small square in the case of graphs for England and Wales and 10 for each small square in the case of the Common-

wealth graphs. The smooth curve may be said to represent the form of the results which would have been obtained under the existing circumstances if the number of cases observed had been indefinitely large and the age intervals had been made indefinitely small.

If a point be taken on the base-line corresponding to any given age, the vertical height of the curve above that point represents the rate per annum at which deaths are occurring at the given age.

ENGLAND AND WALES.

MALES. FEMALES.



MALES. FEMALES.

AUSTRALIAN COMMONWEALTH.

It will be seen that in both instances the curve for males differs considerably from that for females, and that there is a general though not a close resemblance between the two curves for males, and also between the two curves for females. It will also be

noticed that in both cases the curve for females rises much more abruptly than that for males, owing to the fact that the age of maximum frequency is less in the case of females than in the case of males.

The figures dealt with furnish the following death-rates from tuberculosis of the respiratory system for the years specified:—

Particulars.	Males.	Females.	Total.
ENGLAND AND WALES, 1906—			
Population	16,689,707	17,857,309	34,547,016
Deaths from tuberculosis of the respiratory system	22,645	17,101	39,746
Death-rate per 100,000 of population ...	135.68	95.76	115.05
COMMONWEALTH OF AUSTRALIA, 1907—			
Population	2,191,472	1,964,201	4,155,673
Deaths from tuberculosis of the respiratory system	1,891	1,477	3,368
Death-rate per 100,000 of population ...	86.29	75.20	81.05

(xiv.) *Tuberculosis of the Meninges.* The number of deaths registered in 1905 was 290; in 1906, 273; in 1907, 237; in 1908, 205, and in 1909, 220. Not much reliance can, however, be placed on the figures for 1905 and 1906, as the tabulation in some of the States appears to have included cases of simple meningitis in those years.

(xv.) *Other Forms of Tuberculosis.* Deaths in 1905 numbered 498; in 1906, 547; in 1907, 455; in 1908, 394, and in 1909, 382. The deaths in 1909 include the following forms of tuberculosis:—Tuberculosis of the larynx, 50; tuberculosis of the peritonæum, 147; Pott's disease, 43; tuberculosis of other organs, 75; and general tuberculosis, 67.

(xv.*a*) *All Forms of Tuberculosis.* A complete tabulation of all the different tubercular diseases from which deaths occurred in 1909, will be found in Bulletin No. 20 of Population and Vital Statistics. Here it will suffice to show a few of the features of the tabulation mentioned. The total number of deaths due to tubercular diseases was 3721, viz., 2065 males and 1656 females. The following table shews the ages of these 3721 persons:—

AGES OF PERSONS WHO DIED FROM TUBERCULAR DISEASES, 1909.

COMMONWEALTH.

Ages.	Male.	Female	Total.	Ages.	Male.	Female	Total.
Under 5 years ...	131	108	239	55 years and under 60	135	37	172
5 years and under 10	34	31	65	60 „ „ 65	108	49	157
10 „ „ 15	34	40	74	65 „ „ 70	71	36	107
15 „ „ 20	94	156	250	70 „ „ 75	46	19	65
20 „ „ 25	155	246	401	75 „ „ 80	18	8	26
25 „ „ 30	218	253	471	80 „ „ 85	3	4	7
30 „ „ 35	185	196	381	Age not stated ...	4	1	5
35 „ „ 40	223	188	411				
40 „ „ 45	222	122	344				
45 „ „ 50	225	103	328	Total Deaths ...	2,065	1,656	3,721
50 „ „ 55	159	59	218				

The length of residence in the Commonwealth of persons who died from tubercular diseases has been tabulated for the year 1909 for all the Commonwealth States, with the following results:—

LENGTH OF RESIDENCE IN COMMONWEALTH

OF PERSONS WHO DIED FROM TUBERCULAR DISEASES, 1909.

Length of Residence in Commonwealth.	Male.	Fem.	Total.	Length of Residence in Commonwealth.	Male.	Fem.	Total.
Born in Commonwealth ...	1,295	1,376	2,671	Resident 10 yrs. & under 15	30	14	44
Resident under 1 year ...	20	10	30	" 15 " " 20	37	20	57
" 1 year	22	7	29	" 20 " over ...	483	175	658
" 2 years	15	4	19	Length of resid'ce not stated	120	37	157
" 3 "	11	3	14				
" 4 "	6	...	6				
" 5 " & under 10	26	10	36	Total Deaths ...	2,065	1,656	3,721

There would not appear, therefore, to be much ground for the statement sometimes heard that many persons arrive in Australia in the last stages of consumption.

In order to shew the prevalence of tuberculosis in the several States, the death rates from tubercular diseases are shewn in the following table, together with the percentage which deaths from tuberculosis bear on the total number of deaths registered :—

DEATH RATES FROM TUBERCULOSIS AND PERCENTAGE ON TOTAL DEATHS, 1909.

COMMONWEALTH.

State.	Death Rates* from Tuberculosis.			Percentage on Total Deaths.		
	Males.	Females.	Total.	Males.	Females.	Total.
New South Wales	0.81	0.72	0.77	7.59	8.22	7.86
Victoria ...	1.09	0.94	1.02	8.75	9.52	9.09
Queensland ...	0.79	0.53	0.67	7.14	6.54	6.91
South Australia ...	0.89	1.04	0.96	9.16	11.64	10.26
Western Australia	0.90	0.78	0.85	8.50	8.71	8.58
Tasmania ...	0.84	0.87	0.85	7.77	9.61	8.58
Commonwealth	0.90	0.81	0.86	8.09	8.88	8.42

* Number of deaths from tuberculosis per 1000 of mean population.

In the first issue of this book a series of figures was given shewing the rates of mortality from phthisis in various countries, and it was shewn that these ranged from 570 per million in New Zealand to 4415 per million in Hungary, with a rate of 808 for the Commonwealth. It is not considered necessary to repeat those figures here in detail, and it may suffice to state that while deaths from all tubercular diseases in the Commonwealth were 0.86 per thousand in 1909, they were 1.40 per thousand in Belgium in 1904; 1.65 per thousand in England and Wales in 1906; 1.80 per thousand in the Netherlands in 1906; 2.04 per thousand in the German Empire in 1905; and 2.72 per thousand in Switzerland in 1905. The Commonwealth occupies, therefore, a very enviable position in regard to tubercular diseases, when compared with European countries.

(xvi.) *Cancer and other Malignant Tumours.* Deaths from cancer shew a tendency to increase, the figures for 1905 being 2742 deaths; for 1906, 2772 deaths; for 1907, 2940 deaths; for 1908, 2921 deaths, and for 1909, 3112 deaths. Of the deaths registered in 1909, 1626 were those of males, viz., 600 in New South Wales, 529 in Victoria, 191 in Queensland, 156 in South Australia, 97 in Western Australia, and 53 in Tasmania;

while 1486 were those of females; viz., 547 in New South Wales, 493 in Victoria, 146 in Queensland, 154 in South Australia, 85 in Western Australia, and 61 in Tasmania. Bulletin No. 20 contains a complete tabulation of the various types of cancer and of the seat of the disease, of which the following is a summary :—

DEATHS FROM CANCER, COMMONWEALTH, 1909.

Seat of Disease.	Male.	Female	Total.
Cancer, etc., of the mouth	296	27	323
,, ,, the stomach and liver	705	459	1,164
,, ,, the peritonæum, the intestines, and the rectum ...	194	173	367
,, ,, the female genital organs	...	336	336
,, ,, the breast	...	201	201
,, ,, the skin	58	23	81
,, ,, other organs	373	267	640
Total Deaths	1,626	1,486	3,112

Of these deaths 1035 were described as cancer, 1253 as carcinoma, 129 as epithelioma, 387 as "malignant disease," 62 as "malignant tumour," 9 as neoplasm, 35 as "rodent ulcer," 188 as sarcoma, and 14 as scirrhus.

The ages of the 3112 persons who died from cancer in 1909, are shewn in the following table, from which it will be seen that while the ages below 35 are not by any means immune from the disease, the great majority of deaths occurred at ages from 35 upwards, the maximum being found in the age group 65 to 70.

AGES OF PERSONS WHO DIED FROM CANCER, 1909.

COMMONWEALTH.

Ages.	Males.	Female	Total.	Ages.	Males.	Female	Total.
Under 15 years ...	20	14	34	65 years and under 70	252	183	435
15 years and under 20	8	7	15	70 ,, ,, 75	214	174	388
20 ,, ,, 25	9	8	17	75 ,, ,, 80	164	133	297
25 ,, ,, 30	12	20	32	80 ,, ,, 85	46	50	96
30 ,, ,, 35	14	28	42	85 years and over ...	31	23	54
35 ,, ,, 40	40	87	127	Age not stated ...	4	...	4
40 ,, ,, 45	85	122	207				
45 ,, ,, 50	144	155	299				
50 ,, ,, 55	187	154	341	Total Deaths ...	1,626	1,486	3,112
55 ,, ,, 60	189	165	354				
60 ,, ,, 65	207	163	370				

A tabulation has been made of the occupations of the males who died from cancer, of which the following is a summary :—

OCCUPATION OF MALES WHO DIED FROM CANCER, 1909.

COMMONWEALTH.

Occupation.	No. of Deaths.	Occupation.	No. of Deaths.
Professional class	71	Pastoral class	72
Domestic class	46	Working in mines and quarries...	125
Mercantile class	169	Other primary producers ...	16
Engaged in transport and communication	108	Independent means	66
Manufacturing class	165	Dependents	50
Engaged in building and construction	103	Occupation not stated... ...	43
Indefinite industrial workers ...	330	Total Male Deaths ...	1,626
Agricultural class	262		

As the following tables shew, the death rates from cancer are below those for tubercular diseases in all the States (with the exception, however, of the female death rates in New South Wales and Queensland), but while the latter have a general tendency to decrease the former have, on the contrary, shewn an increase in nearly every recent year.

DEATH RATES* FROM CANCER AND PERCENTAGE ON TOTAL DEATHS, 1909.

COMMONWEALTH.

State.	Death Rates* from Cancer.			Percentage on Total Deaths.		
	Males.	Females.	Total.	Males.	Females.	Total.
New South Wales	0.70	0.73	0.71	6.53	8.25	7.26
Victoria ...	0.82	0.77	0.79	6.55	7.74	7.08
Queensland ...	0.62	0.56	0.59	5.69	6.92	6.10
South Australia ...	0.71	0.80	0.75	7.29	9.01	8.05
Western Australia	0.62	0.74	0.67	5.80	8.23	6.73
Tasmania ...	0.56	0.68	0.62	5.15	7.51	6.19
Commonwealth	0.71	0.73	0.72	6.37	7.96	7.04

* Number of deaths from Cancer per 1000 of mean population.

The table shewing the death rates from cancer in various countries, which was given in the first issue of this work, is not here repeated. It may, however, be stated that while the death rate of the Commonwealth from cancer in 1909 was 0.71 per thousand, that of Belgium in 1904 was 0.56; that of the German Empire in 1905, 0.80; that of England and Wales in 1905, 0.92; that of the Netherlands in 1906, 1.01; and that of Switzerland in 1905, 1.32 per thousand.

(xvii.) *Simple Meningitis.* The table shews 461 deaths in 1905, 250 deaths in 1906, 648 deaths in 1907, 676 deaths in 1908, and 616 deaths in 1909. The last three figures are the only ones that can be taken as correct, the returns for some of the States having in 1905 and 1906 included this disease with tuberculosis of the meninges, as has already been stated in paragraph xiv.

(xviii.) *Congestion, Hæmorrhage, and Softening of the Brain.* The deaths registered under this heading in 1905 numbered 1611, viz., 865 males and 746 females; in 1906, they were 1685, viz., 904 males and 781 females; in 1907, 1901, viz., 1038 males and 863 females; in 1908, 1867, viz., 991 males and 876 females, and in 1909, 1665, viz., 869 males and 796 females. The 1909 figures are made up of congestion and hæmorrhage of the brain—822 males, 751 females, total 1573; and softening of the brain—47 males, 45 females, total 92.

(xix.) *Organic Diseases of the Heart.* Owing to the changes in tabulation it is impossible to say whether the figures for the five years are strictly comparable. The number of deaths registered in 1909 was 3940, viz., 2257 males and 1683 females. Of these deaths, New South Wales was responsible for 775 males and 510 females; Victoria for 801 males and 695 females; Queensland for 282 males and 158 females; South Australia for 198 males and 202 females; Western Australia for 130 males and 65 females; and Tasmania for 71 males and 53 females. To the figures for 1909 correspond the following death rates and percentages to total deaths:—

DEATH RATES* FROM ORGANIC HEART DISEASE AND PERCENTAGE ON TOTAL DEATHS, COMMONWEALTH, 1909.

State.	Death Rates* from Organic Heart Disease.			Percentage on Total Deaths.		
	Males.	Females.	Total.	Males.	Females.	Total.
New South Wales	0.90	0.68	0.80	8.44	7.70	8.13
Victoria ...	1.24	1.08	1.16	9.93	10.92	10.36
Queensland ...	0.91	0.61	0.78	8.25	7.48	7.96
South Australia ...	0.90	1.05	0.97	9.25	11.81	10 39
Western Australia	0.83	0.57	0.72	7.78	6.29	7.21
Tasmania ...	0.75	0.59	0.67	6.89	6.53	6.73
Commonwealth ...	0.99	0.82	0.91	8.85	9.02	8.92

* Number of deaths from Organic Heart Disease per 1000 of mean population.

(xx.) *Acute Bronchitis.* The classification of causes of deaths requires deaths of persons under five years of age, which are merely ascribed to "bronchitis," to be classified under "acute bronchitis," and similarly certified deaths of older persons under "chronic bronchitis." This rule has been followed in adjusting the tabulation of 1905 and 1906, and followed throughout in compiling the tables for 1907, 1908, and 1909, with the result that acute bronchitis is credited with 478 deaths in 1905, 421 deaths in 1906, 514 deaths in 1907, 412 deaths in 1908, and 422 deaths in 1909, viz., 238 males and 184 females.

(xxi.) *Chronic Bronchitis.* The adjustment mentioned in the preceding paragraph gives a total of 1023 deaths due to chronic bronchitis in 1905, 984 deaths in 1906, 844 deaths in 1907, 818 deaths in 1908, and 897 deaths, viz., 549 males and 348 females, in 1909.

(xxii.) *Pneumonia.* The figures for 1905 and 1906 are unduly swelled by the inclusion of broncho-pneumonia, etc., which in 1907, 1908, and 1909 is classified under "Other Diseases." The 1909 figures were 1106 males and 646 females, a total of 1752 deaths.

(xxiii.) *Diseases of the Stomach (Cancer excepted).* In 1909 this heading includes: Ulcer of the stomach, 44 males, 45 females; and other diseases of the stomach (cancer excepted), 99 males, 84 females; a total of 272 deaths. The corresponding figures for 1905 and 1906, which are fairly comparable, were 442 and 467 respectively, and those for

1907 and 1908, which were compiled on the same basis as those for 1909, 334 and 308 respectively.

(xxiv.) *Diarrhœa and Enteritis (Children under two years only).* In 1905 the deaths numbered 2593, viz., 1421 boys and 1172 girls; in 1906 they were 2881, viz., 1624 boys and 1257 girls; in 1907, 2733, viz., 1513 boys and 1220 girls; in 1908, 3236, viz., 1814 boys and 1422 girls; and in 1909, 2803, viz., 1544 boys and 1259 girls. The 1909 deaths were distributed amongst the six States as follows:—New South Wales, 666 males, 534 females, total 1200; Victoria, 417 males, 299 females, total 716; Queensland, 205 males, 187 females, total 392; South Australia, 91 males, 81 females, total 172; Western Australia, 137 males, 127 females, total 264; and Tasmania, 28 males, 31 females, total 59.

The following are the death rates and percentages on total deaths due to infantile diarrhœa and enteritis in the six States for the year 1909:—

DEATH RATES FROM INFANTILE DIARRHŒA AND ENTERITIS, AND PERCENTAGE ON TOTAL DEATHS, COMMONWEALTH, 1909.

State.	Death Rate* from Infantile Diarrhœa and Enteritis.			Percentage on Total Deaths.		
	Males.	Females.	Total.	Males.	Females.	Total.
New South Wales	0.78	0.71	0.74	7.25	8.06	7.59
Victoria ...	0.64	0.46	0.55	5.17	4.70	4.96
Queensland ...	0.66	0.72	0.69	6.00	8.86	7.09
South Australia ...	0.41	0.42	0.42	4.25	4.74	4.47
Western Australia	0.87	1.11	0.97	8.20	12.29	9.76
Tasmania ...	0.29	0.34	0.32	2.72	3.82	3.20
Commonwealth	0.68	0.61	0.65	6.05	6.75	6.35

* Number of deaths from these diseases per 1000 of mean population.

As a large number of these deaths is directly due to improper feeding, it would be interesting to know the percentages of infants who were bottle-fed, but, unfortunately, no provision exists for the registration of that fact. The number of deaths was larger than usual in 1908 particularly in Victoria, and to a lesser degree in South Australia and in Tasmania, owing to the phenomenal heat experienced in the early part of that year. The death rates for the three States named were only 0.82, 0.59, and 0.74 per 1000 respectively in 1908, compared with 0.54, 0.44 and 0.49 in 1907, and with 0.55, 0.42 and 0.32 in 1909.

(xxv.) *Hernia, Intestinal Obstructions.* The number of deaths has not varied much from year to year, the number registered in 1905 being 432; in 1906, 399; in 1907, 411; in 1908, 389; and in 1909, 396, viz., 215 males and 181 females.

(xxvi.) *Cirrhosis of the Liver.* The deaths in 1905 numbered 290; in 1906, 267; in 1907, 325; in 1908, 362; and in 1909, 331, viz., 211 males and 120 females.

(xxvii.) *Nephritis and Bright's Disease.* The number of deaths attributable to these diseases is a very large one from year to year. In 1905 there were registered the deaths of 1083 males and 690 females; in 1906, those of 1114 males and 678 females; in 1907, those of 1065 males and 695 females; in 1908, those of 1140 males and 724 females; and in 1909, those of 1076 males and 723 females. Of the deaths registered in 1909, those of 71 males and 81 females were ascribed to acute nephritis, and those of

1005 males and 642 females to Bright's disease. New South Wales was responsible for 612 deaths; Victoria for 643; Queensland for 230; South Australia for 183; Western Australia for 83; and Tasmania for 48; making a total of 1799.

(xxviii.) *Non-cancerous Tumours and other Diseases of the Female Genital Organs.* Deaths in 1905 numbered 134; in 1906, 153; in 1907, 128; in 1908, 159; and in 1909, 130. Included in the 130 deaths registered in 1909 were the following:—Metritis, 4; non-puerperal uterine hæmorrhage, 4; non-cancerous uterine tumours, 32; other diseases of the uterus, 15; cysts and other ovarian tumours, 37; other diseases of the female genital organs, 38.

(xxix.) *Puerperal Septicæmia (Puerperal Fever, Puerperal Peritonitis, Puerperal Phlebitis).* Deaths in 1905 were 205; in 1906, 168; in 1907, 179; in 1908, 202; and in 1909, 201.

(xxx.) *Other Puerperal Accidents of Pregnancy and Confinement.* The deaths in 1905 numbered 411; in 1906, 458; in 1907, 435; in 1908, 404; and in 1909, 376. Included in the 376 deaths registered in 1909 were the following:—Accidents of pregnancy, 70; puerperal hæmorrhage, 46; other accidents of childbirth, 118; puerperal albuminuria and eclampsia, 91; other puerperal accidents (including "sudden death"), 50; puerperal diseases of the breast, 1.

(xxx. *a*) *All Puerperal Diseases.* The 577 deaths registered in 1909 under the two preceding headings will be found tabulated in "Bulletin No. 20 of Population and Vital Statistics" under various aspects. It will suffice to repeat here the following facts:—

Of the 577 mothers who died in childbirth during the year 1909, 513 were married and 64 were single. As the total number of nuptial confinements was 106,113, and of ex-nuptial confinements 6808, it follows that one in 207 of married mothers, and one in 106 of single mothers, died of puerperal disease, the general proportion being one in 195, as against one in 181 in 1908, and one in 178 in 1907.

The ages of the mothers who died varied from 15 to 48 years, and are shewn in the following table:—

AGES OF MOTHERS WHO DIED IN CHILDBIRTH, COMMONWEALTH, 1909.

Age at Death.	Married Women.	Single Women.	Total.	Age at Death.	Married Women.	Single Women	Total.
15 years ...	...	1	1	33 years ...	24	...	24
17 „ ...	2	6	8	34 „ ...	29	...	29
18 „ ...	1	3	4	35 „ ...	23	1	24
19 „ ...	5	7	12	36 „ ...	28	1	29
20 „ ...	12	8	20	37 „ ...	20	1	21
21 „ ...	12	3	15	38 „ ...	20	1	21
22 „ ...	10	3	13	39 „ ...	16	...	16
23 „ ...	13	3	16	40 „ ...	22	...	22
24 „ ...	20	1	21	41 „ ...	13	...	13
25 „ ...	24	4	28	42 „ ...	18	...	18
26 „ ...	19	1	20	43 „ ...	10	...	10
27 „ ...	32	6	38	44 „ ...	3	...	3
28 „ ...	26	3	29	45 „ ...	4	...	4
29 „ ...	27	6	33	46 „ ...	3	...	3
30 „ ...	22	...	22	48 „ ...	2	...	2
31 „ ...	26	3	29				
32 „ ...	27	2	29	T't'l Deaths	513	64	577

Of the 513 married women shewn in the above table, 19 died in Tasmania; in regard to these no information is available as to previous issue and as to duration of marriage.

Of the remaining 494 women, 151 died at their first confinement, 73 at their second, 70 at their third, 44 at their fourth, 45 at their fifth, 37 at their sixth, 26 at their seventh, 22 at their eighth, 13 at their ninth, 3 at their tenth, 4 at their eleventh, 4 at their twelfth, 1 at her thirteenth, and 1 at her fourteenth confinement. The total number of children of the 494 mothers was 1548.

Twenty-five of the mothers who died had been married less than one year; 65 between one and two years; 41 between two and three years; the duration of marriage ranging up to 27 years. This tabulation will be found in detail, and distinguishing the ages at marriage, in "Bulletin No. 20. of Population and Vital Statistics," as will a further tabulation shewing the duration of marriage and previous issue in combination. The tables shew, for instance, that one mother, who had been married at the age of 19 years, died at the age of 42, in the 23rd year of her marriage, at her thirteenth confinement. The mother who died at her fourteenth confinement had been married for 24 years, and was at the time of her death 43 years old.

(xxxi.) *Congenital Debility and Malformations.* As has been pointed out on a previous page, the figures set down under this heading, viz., 3200 for 1905, 2960 for 1906, 3038 for 1907, 2973 for 1908, and 2905 for 1909 are not strictly comparable, owing to the impossibility of distinguishing in every case for 1905 and 1906 between children under three months of age and those from three to twelve months. The 1909 figures include:—Malformations, 174 males, 130 females, total 304; and congenital debility, icterus, and scleroma of children under three months of age, 1500 males and 1101 females, total 2601; or a grand total of 2905. Of these deaths, 1093 were registered in New South Wales, viz., 616 males and 477 females; 825 in Victoria, viz., 480 males and 345 females; 384 in Queensland, viz., 228 males and 156 females; 251 in South Australia, viz., 149 males and 102 females; 198 in Western Australia, viz., 106 males and 92 females; and 154 in Tasmania, viz., 95 males and 59 females.

(xxxii.) *Senile Debility.* The deaths ascribed to "old age" form a large group, and are slightly in excess of those due to infantile debility. In 1905 they numbered 3160, viz., 1807 males and 1353 females; in 1906, 3031, viz., 1712 males and 1319 females; in 1907, 3136, viz., 1721 males and 1415 females; in 1908, 3466, viz., 2027 males and 1439 females; and in 1909, 3194, viz., 1829 males and 1365 females. Of the deaths registered in 1909, 982 occurred in New South Wales, viz., 554 males and 428 females; 1288 in Victoria, viz., 751 males and 537 females; 242 in Queensland, viz., 153 males and 89 females; 320 in South Australia, viz., 159 males and 161 females; 111 in Western Australia, viz., 68 males and 43 females; and 251 in Tasmania, viz., 144 males and 107 females.

Of the males whose death was described as due to senility, 5 were between 55 and 59; 31 between 60 and 64; 108 between 65 and 69; 261 between 70 and 74; 486 between 75 and 79; 486 between 80 and 84; 294 between 85 and 89; 124 between 90 and 94; 27 between 95 and 99; while 6 were 100 years old and upwards; and of one the age was not stated.

Of the females, one was between 45 and 49; 1 between 50 and 54; 2 between 55 and 59; 21 between 60 and 64; 88 between 65 and 69; 186 between 70 and 74; 334 between 75 and 79; 338 between 80 and 84; 261 between 85 and 89; 107 between 90 and 94; 16 between 95 and 99; while 9 were 100 years old and upwards; and of one the age was not stated.

(xxxiii.) *Violence.* A very large number of deaths is every year due to external violence, and, as might be expected from the fact that their occupations expose them much more to accidents, males largely predominate. The figures quoted are exclusive of suicides, which have been treated as a separate group. Deaths ascribed to violence numbered, in 1905, 2663, viz., 2014 males and 649 females; in 1906, 2617, viz., 2024 males and 593 females; in 1907, 2679, viz., 2038 males and 641 females; in 1908, 2922, viz., 2187 males and 735 females; and in 1909, 2664, viz., 2050 males and 614 females. Of the deaths registered in 1909, those of 757 males and 254 females occurred in New South Wales; those of 489 males and 184 females in Victoria; those of 365

males and 76 females in Queensland; those of 181 males and 43 females in South Australia; those of 183 males and 29 females in Western Australia; and those of 75 males and 28 females in Tasmania.

The following table shews the various kinds of accidental deaths which occurred in 1909, distinguishing males and females:—

DEATHS FROM VIOLENCE, COMMONWEALTH, 1909.

Cause of Death.	Males.	Females.	Total.
Fractures	97	28	125
Other accidental injuries	1,029	137	1,166
Burning by fire	119	188	307
Burning by corrosive substances	...	1	1
Insolation	50	29	79
Freezing	...	...	...
Electric shock	11	1	12
Accidental drowning	441	81	522
Inanition	42	2	44
Inhalation of noxious gases	35	18	53
Other accidental poisoning	49	32	81
Other external violence	177	97	274
Total Deaths	2,050	614	2,664

In every kind of accidental death there was, therefore, a large excess of males, with the exception of burning accidents, in which female deaths largely predominated.

The excessive heat of January, 1908, was responsible for an increase in the number of deaths caused by insolation, i.e., sunstroke and heat apoplexy, from 64 in 1907 to 246 in 1908, distributed as follows:—New South Wales, 46; Victoria, 130; Queensland, 14; South Australia, 39; Western Australia, 15; Tasmania, 2. In 1909, as the preceding table shews, the deaths fell to 79.

(xxxiii.*a*) *Suicide.* Although their number in 1908 and 1909 was greater than it was in 1907, it may be said that suicides have shewn a tendency to decrease during recent years, the number in 1905 having been 520, viz., 431 males and 89 females; while in 1906 it was 499, viz., 403 males and 96 females; in 1907, 461, viz., 385 males and 76 females; in 1908, 497, viz., 413 males and 84 females; and in 1909, 495, viz., 398 males and 97 females. Of the last named, those of 146 males and 45 females happened in New South Wales; those of 97 males and 27 females in Victoria; those of 85 males and 8 females in Queensland; those of 31 males and 10 females in South Australia; those of 32 males and 4 females in Western Australia; and those of 7 males and 3 females in Tasmania.

The modes adopted by persons who committed suicide in 1909 were as follows:—

SUICIDES, COMMONWEALTH, 1909.

Mode of Death.	Males.	Females.	Total.
Poison	70	54	124
Asphyxia	2	...	2
Hanging or strangulation	67	9	76
Drowning	24	19	43
Firearms	138	6	144
Cutting instruments	74	5	79
Precipitation from a height	7	...	7
Crushing	5	1	6
Other modes	11	3	14
Total Suicides	398	97	495

The death rates from suicides and the percentage on total deaths borne by suicides are shewn in the following table :—

DEATH RATES* FROM SUICIDES AND PERCENTAGE ON TOTAL DEATHS, 1909.

COMMONWEALTH.

State.	Death Rates* from Suicides.			Percentage on Total Deaths.		
	Males.	Females.	Total.	Males.	Females.	Total.
New South Wales	0.17	0.06	0.12	1.59	0.68	1.23
Victoria ...	0.15	0.04	0.09	1.20	0.42	0.86
Queensland ...	0.27	0.03	0.16	2.48	0.38	1.68
South Australia ...	0.14	0.05	0.10	1.45	1.00	1.06
Western Australia	0.20	0.03	0.13	1.91	0.39	1.33
Tasmania ...	0.07	0.03	0.05	0.68	0.37	0.54
Commonwealth	0.17	0.05	0.11	1.56	0.52	1.12

* Number of deaths from suicide per 1000 of mean population.

From the following table, which shews the ages of the persons who committed suicide in 1909, it will be seen that both extreme youth and extreme old age are represented :—

AGES OF PERSONS WHO COMMITTED SUICIDE, COMMONWEALTH, 1909.

Ages.	M.	F.	Total.	Ages.	M.	F.	Total.
10 years and under 15	3	...	3	60 years and under 65	24	3	27
15 „ „ 20	10	12	22	65 „ „ 70	26	...	26
20 „ „ 25	24	12	36	70 „ „ 75	12	2	14
25 „ „ 30	32	11	43	75 „ „ 80	4	...	4
30 „ „ 35	46	12	58	80 „ „ 85	6	...	6
35 „ „ 40	36	16	52	85 „ „ 90	2	...	2
40 „ „ 45	51	9	60	Age not stated ...	3	...	3
45 „ „ 50	50	14	64				
50 „ „ 55	34	6	40				
55 „ „ 60	35	...	35	Total Deaths ...	398	97	495

The birthplaces of persons who committed suicide are shewn in the following table:—

BIRTHPLACES OF PERSONS WHO COMMITTED SUICIDE, COMMONWEALTH, 1909.

Birthplaces.	M.	F.	Total.	Birthplaces.	M.	F.	Total.
New South Wales ...	79	28	107	Sweden	5	...	5
Victoria	66	30	96	Switzerland ...	2	...	2
Queensland ...	21	6	27	Wales	3	1	4
South Australia ...	21	11	32	Canada	1	...	1
Western Australia ...	2	...	2	United States ...	3	...	3
Tasmania	10	5	15	West Indies ...	1	...	1
New Zealand ...	2	...	2	South America ...	1	...	1
Denmark	4	...	4	China	6	1	7
England	71	9	80	India	1	...	1
Germany	16	...	16	Fiji	1	...	1
Ireland ...	20	3	23	Birthplace not stated	35	2	37
Italy ...	3	...	3				
Norway ...	2	...	2				
Russia	1	...	1	Total Deaths ...	398	97	495
Scotland	21	1	22				

The following table shews the occupations of the 398 males who committed suicide:—

OCCUPATIONS OF MALE PERSONS WHO COMMITTED SUICIDE, 1909.

COMMONWEALTH.

Occupations.	Deaths.	Occupations.	Deaths.
Professional class	21	Pastoral class	26
Domestic class	13	Working in mines and quarries ...	34
Mercantile class	59	Other primary producers ...	6
Engaged in transport and communication	31	Independent means	4
Manufacturing class	39	Dependents	2
Engaged in building and construction	16	Occupation not stated ...	16
Indefinite industrial workers ...	90		
Agricultural class	41	Total Deaths	398

The assertion has been made that suicide has become more frequent during recent years, but an examination of the figures from the year 1871 onwards hardly bears this out. The absolute figures have certainly increased, but proportionately to the population the figures for 1906-09 are practically the same as those for 1886-90. No particulars are available for Western Australia prior to 1886, and from 1886 to 1895 the sexes are not distinguished. All figures for the first five periods are, therefore, exclusive of Western Australia:—

SUICIDES, COMMONWEALTH, 1871-75 to 1906-9.

Period.	Number of Suicides.			Suicides per One Million.			Suicides of Females to 100 Suicides of Males. Based on	
	Males.	Females.	Total.	Males.	Females.	Total.	Absolute Figures.	Rates.
1871-75	715	150	865	150.94	37.56	99.07	20.98	24.88
1876-80	878	145	1,023	159.69	31.06	100.62	16.51	19.45
1881-85	999	183	1,182	152.58	32.90	97.61	18.32	21.56
1886-90	1,394	292	[1]1,686	179.20	43.97	[3]116.92	20.95	24.54
1891-95	1,574	337	[2]1,911	181.34	44.09	[4]117.07	21.41	24.31
1896-1900	1,838	410	2,248	191.11	47.88	123.65	22.31	25.05
1901-05	2,054	380	2,434	200.51	40.96	124.69	18.50	20.43
1906-09	1,599	353	1,952	180.63	44.44	116.22	22.08	24.60

1. 1705 inclusive of Western Australian figures. 2. 1984 inclusive of Western Australian figures. 3. 116.49 inclusive of Western Australian figures. 4. 119.11 inclusive of Western Australian figures.

(xxxiv.) *Other Diseases.* The number of causes included under this heading is a very large one, amounting to no less than 89 of the items shewn in the detailed classification, and deaths were recorded under every one of these with the exception of the following six:—Glanders and farcy, rabies, pellagra, gonococcic diseases of children under five years of age, other general diseases, other poisonings due to occupation. The total number of deaths under "other diseases" in 1905 was 10,263, viz., 6137 males and 4126 females; in 1906 it was 9976, viz., 5880 males and 4096 females; in 1907, 8679, viz., 5102 males and 3577 females; in 1908, 9289, viz., 5473 males and 3816 females; and in 1909, 9338, viz., 5480 males and 3858 females. Some of the diseases included here account for very considerable numbers of deaths. Thus there were 791 deaths ascribed to bronchopneumonia; 864 to diarrhœa and enteritis of children over two years of age and of adults, 523 to convulsions of children under five years of age; 381 to diabetes; 319 to paralysis without indicated cause; and 344 to appendicitis and abscess of the iliac fossa. Particulars of the deaths included in 1909 are shewn in the following table:—

CAUSES OF DEATH INCLUDED UNDER "OTHER DISEASES," COMMONWEALTH, 1909.

Causes.	M.	F.	T'tal.	Causes.	M.	F.	T'tal.
Leprosy	10	...	10	Broncho-Pneumonia	434	357	791
Purulent Infection and Septicæmia	68	54	122	Pleurisy	100	54	154
Malignant Pustule and "Charbon"	2	...	2	Congestion of the Lungs and Pulmonary Apoplexy	94	70	164
Trichinosis, etc.	3	2	5	Gangrene of the Lungs	22	7	29
Scrofula	3	1	4	Asthma	111	49	160
Syphilis	110	61	171	Pulmonary Emphysema	13	7	20
Blennorrhagia of Adults	1	...	1	Other Diseases of the Respiratory System (Consumption excepted)	90	31	121
Other Tumours (Tumours of the female genital organs excepted)	23	33	56	Diseases of the Mouth and its Associated Organs	8	6	14
Acute Articular Rheumatism	60	49	109	Diseases of the Pharynx	18	23	41
Chronic Rheumatism & Gout	76	57	133	Diseases of the Oesophagus	13	3	16
Scurvy	3	4	7	Diarrhœa and Enteritis of Children over two years of age and Adults	447	417	864
Diabetes	186	195	381	Intestinal Parasites	6	1	7
Exophthalmic Goitre	3	41	44	Other Diseases of the Intestin's	31	28	59
Addison's Disease	10	12	22	Icterus Gravis	...	4	4
Leucæmia	44	27	71	Hydatid Tumours of the Liver	33	29	62
Anæmia, Chlorosis	125	131	256	Biliary Calculi	39	81	120
Acute and Chronic Alcoholism	118	35	153	Other Diseases of the Liver	121	89	210
Lead Poisoning	8	1	9	Diseases of the Spleen	8	1	9
Other Chronic Poisonings	9	2	11	Simple Peritonitis (non-puerperal)	103	95	198
Encephalitis	10	11	21	Other Diseases of the Digestive System (Cancer and Tuberculosis excepted)	11	5	16
Progressive Locomotor Ataxia	31	10	41	Appendicitis and Abscess of the Iliac Fossa	198	146	344
Other Diseases of the Spinal Cord	173	97	270	Other Diseases of the Kidneys and their Adnexa	52	43	95
Paralysis without indicated cause	173	146	319	Calculi of Urinary System	24	7	31
General Paralysis	111	22	133	Diseases of the Bladder	132	25	157
Other Forms of Mental Alienation	35	36	71	Other Diseases of the Urethra, Urinary Abscess, etc.	37	....	37
Epilepsy	80	63	143	Diseases of the Prostate	164	...	164
Eclampsia (non-puerperal)	27	36	63	Non-venereal Diseases of the Male Genital Organs	3	...	3
Convulsions of Children under five years of age	286	237	523	Non-puerperal Diseases of the Breast (cancer excepted)	...	1	1
Tetanus	70	31	101	Gangrene	72	47	119
Chorea	2	3	5	Carbuncle	12	9	21
Other Diseases of the Nervous System	218	117	335	Phlegmon, Acute Abscess	32	21	53
Diseases of the Eyes and their Appendages	...	1	1	Other Diseases of the Skin and Adnexa	56	46	102
Diseases of the Ear	...	1	1	Non-tubercular Diseases of the Bones	40	19	59
Pericarditis	17	21	38	Arthritis and other Diseases of the Joints (Tuberculosis & Rheumatism excepted)	8	5	13
Acute Endocarditis	196	160	356	Amputation	1	...	1
Angina Pectoris	60	32	92	Other Diseases of the Organs of Locomotion	1	...	1
Diseases of the Arteries, Atheroma, Aneurism	343	92	435	Other Diseases peculiar to Infancy	59	48	107
Embolism and Thrombosis	98	152	250	Want of Care (Infants)	8	10	18
Diseases of the Veins (Varices Varicose Ulcers, Hæmorrhoids)	5	10	15	Total Deaths	5,480	3,858	9,338
Diseases of the Lymphatic System	...	4	4				
Hæmorrhages	16	24	40				
Other Diseases of Circulatory System	2	1	3				
Diseases of the Nasal Fossæ	8	2	10				
Diseases of the Larynx	55	41	96				
Diseases of the Thyroid Body	1	19	20				

(xxxv.) *Unspecified or Ill-defined Diseases.* The number of cases which has to be included here is a considerable one from year to year, having numbered 1042 in 1905, 1168 in 1906; 1275 in 1907; 1262 in 1908; and 1087, viz., 681 males and 406 females, in 1909. The detailed classification distinguishes these ill-defined diseases under three headings:—Dropsy, including such definitions as anasarca, ascites, general œdema, etc.; sudden death, including syncope; and unspecified or ill-defined causes, of which the following are specimens:—Asthenia, coma, dentition, exhaustion, heart failure, etc. In 1909 the number of cases of death which would have to be classed under the first of these categories was 28; those belonging to the second, 65; and those belonging to the third, 994. It is, of course, true that there must always occur some cases where the disease is not well characterised, or where sufficient information is not procurable to allow of a clear definition being given in the certificate of death, but in the majority of cases included under this heading a more complete diagnosis and consequently a more satisfactory certificate would no doubt have been possible.

18. **Causes of Death in Classes.**—The figures presented in the preceding paragraphs relate to certain definite causes of death. It is almost generally acknowledged that figures of this kind are of greater value in medical statistics than is a classification under general headings. The classification under fourteen general headings adopted by the compiler of The International Nomenclature is, however, shewn in the following table, together with the death rates and percentages on total deaths pertaining to those classes:

DEATHS, DEATH RATES*, AND PERCENTAGES ON TOTAL DEATHS IN CLASSES, 1909.
COMMONWEALTH.

Class.	Total Deaths.			Death Rate.*			Percentage on Total Deaths.		
	M.	F.	Total.	M.	F.	Total	M.	F.	Total.
1. General diseases	5,722	4,734	10,456	2.51	2.31	2.42	22.44	25.36	23.67
2. Diseases of the Nervous System & of the Organs of Special Sense...	2,419	1,889	4,308	1.06	0.92	0.99	9.48	10.13	9.75
3. Diseases of the Circulatory System	2,994	2,179	5,173	1.31	1.06	1.19	11.74	11.68	11.72
4. Diseases of the Respiratory System	2,821	1,815	4,636	1.24	0.88	1.07	11.06	9.73	10.50
5. Diseases of the Digestive Organs...	3,149	2,617	5,766	1.38	1.28	1.33	12.34	14.03	13.05
6. Diseases of the Genito-Urinary System and Adnexa	1,488	929	2,417	0.65	0.45	0.56	5.83	4.98	5.47
7. Puerperal Condition	...	577	577	...	0.28	0.13	...	3.09	1.31
8. Diseases of the Skin and of the Cellular Tissue...	172	123	295	0.07	0.06	0.07	0.67	0.66	0.67
9. Diseases of the Organs of Locomotion	50	24	74	0.02	0.01	0.02	0.19	0.13	0.16
10 Malformations	174	130	304	0.07	0.06	0.07	0.68	0.70	0.69
11. Infancy	1,567	1,159	2,726	0.69	0.56	0.63	6.14	6.21	6.17
12. Old Age	1,829	1,365	3.194	0.80	0.66	0.74	7.17	7.32	7.23
13. Violence	2,448	711	3,159	1.07	0.34	0.73	9.59	3.81	7.15
14. Ill-defined Diseases	681	406	1,087	0.30	0.20	0.25	2.67	2.17	2.46
Total	25,514	18.658	44,172	11.20	9.13	10.22	100 00	100.00	100.00

* Number of deaths per 1000 of mean population.

19. **Age at Death of Married Males and Females, and Issue.**—"Bulletin No. 20 of Population and Vital Statistics" contains a number of tables, compiled for the first time for the year 1908 for the Commonwealth, exclusive of Tasmania, shewing the age at marriage, age at death, duration of life after marriage, birthplaces, and occupations, in combination with the issue, of married persons who died in 1909. A short summary of the tables mentioned is given hereunder. Deaths of married males in 1909 numbered 10,751, and of married females, 9891. The ages at death of the males ranged from 20 to 109 years, and those of the females, from 17 to 109 years. The total number of children in the families of the 10,751 males was 57,889, the maximum in one family being 25; and of the 9891 females, 51,474, with a maximum of 21. The average number of children is shewn for various age-groups in the following table:—

AGE AT DEATH OF MARRIED MALES AND FEMALES, AND AVERAGE ISSUE,
COMMONWEALTH (EXCLUSIVE OF TASMANIA), 1909.

Age at Death.	Average Family of Males.	Average Family of Females.	Age at Death.	Average Family of Males.	Average Family of Females.
Under 20 years ...	...	0.73	70 to 74 years ...	6.35	6.45
20 to 24 years ...	0.79	1.31	75 „ 79 „ ...	6.42	6.43
25 „ 29 „ ...	1.49	1.93	80 „ 84 „ ...	6.35	5.92
30 „ 34 „ ...	1.95	2.59	85 „ 89 „ ...	6.28	5.84
35 „ 39 „ ...	2.65	3.53	90 „ 94 „ ...	7.32	5.60
40 „ 44 „ ...	3.45	4.24	95 „ 99 „ ...	6.86	5.14
45 „ 49 „ ...	4.37	4.79	100 years and upwards	3.25	6.70
50 „ 54 „ ...	4.96	5.35	Age not stated ...	5.57	3.75
55 „ 59 „ ...	5.41	5.83			
60 „ 64 „ ...	5.95	6.00			
65 „ 69 „ ...	6.14	6.10	All ages	5.38	5.20

The figures shewn in the preceding table include the issue both living and dead; the proportion between the two, taking deceased males and females together, was about as 758 to 242, or, roughly speaking, as three to one. The totals are shewn in the following table:—

ISSUE OF MARRIED MALES AND FEMALES,

COMMONWEALTH (EXCLUSIVE OF TASMANIA), 1909.

Issue of Married Males.	Males.	Females.	Total.	Issue of Married Females.	Males.	Females.	Total.
Living ...	22,565	22,282	44,847	Living ...	19,121	18,966	38,087
Dead	7,000	6,042	13,042	Dead ...	7,120	6,267	13,387
Total ...	29,565	28,324	57,889	Total ...	26,241	25,233	51,474

These figures shew a masculinity in the births of 104.20, which agrees fairly well with the experience of the birth statistics, the masculinity of the births in the Commonwealth from 1901 to 1909 having ranged from 104.11 to 105.99.

As a matter of curiosity it may be mentioned that the family of twenty-five belonged to a father who died at the age of 81, and that it had originally comprised fifteen sons and ten daughters, of whom fourteen sons and eight daughters survived their father.

20. **Age at Marriage of Males and Females, and Issue.**—While the table giving the average families of married males and females naturally shews an increase in the averages with advancing ages at death, the following table, which gives the average families of males and females according to the age at marriage of the deceased parents, shews a corresponding decrease in the averages as the age at marriage advances:—

AGE AT MARRIAGE OF MALES AND FEMALES, AND AVERAGE ISSUE,

COMMONWEALTH (EXCLUSIVE OF TASMANIA), 1909.

Age at Marriage.	Average Family of Males.	Average Family of Females.	Age at Marriage.	Average Family of Males.	Average Family of Females.
Under 20 years ...	6.91	6.96	55 to 59 years ...	1.54	...
20 to 24 years ...	6.36	5.63	60 „ 64 „ ...	0.75	...
25 „ 29 „ ...	5.66	4.22	65 years and upwards	0.10	...
30 „ 34 „ ...	4.82	3.00	Age not stated ...	5.31	4.67
35 „ 39 „ ...	3.99	1.60			
40 „ 44 „ ...	3.26	0.57			
45 „ 49 „ ...	2.51	0.08			
50 „ 54 „ ...	1.84	...	All ages ...	5.38	5.20

It will be seen that of women who were married at ages from 40 to 44 years, one in every two gave birth to a child, while in the case of women who were married at ages from 45 to 49 years, the proportion fell to one in every twelve.

21. **Duration of Life after Marriage of Males and Females.**—The duration of life after marriage has been tabulated for males and females both in combination with the age at marriage, and with the total and average issue. The tables shewing the result do

not, however, lend themselves to condensation, and are, therefore, omitted here. They will be found in "Bulletin No. 20 of Population and Vital Statistics," pages 134 to 139.

22. **Birthplaces of Married Males and Females, and Issue.**—In the following table, which shews the birthplaces of married males and females whose deaths were registered in 1909, together with their average issue, the total numbers of males and females have been inserted under each birthplace. No generalisations can, of course, be made in those cases where the number of deaths is small, and where the average family had to be worked out on small figures. But where the figures are comparatively large, as in the case of natives of the Commonwealth, differences occur between the averages of the individual States which appear inexplicable on any other ground than that of inefficient registration in some of the States. It will be noted that the differences occur both in the male and female averages. Although the figures apply to the Commonwealth as a whole, with the exception of Tasmania, it must be borne in mind that the vast majority of deaths of natives of any one State are registered in that particular State. For the whole Commonwealth the average family of deceased males was 4.65, and of deceased females, 4.36.

BIRTHPLACES OF MARRIED MALES AND FEMALES, AND AVERAGE ISSUE,

COMMONWEALTH (EXCLUSIVE OF TASMANIA), 1909.

Birthplaces.	Married Males.		Married Females.		Birthplaces.	Married Males.		Married Females.	
	Deaths.	Average Family.	Deaths.	Average Family.		Deaths.	Average Family.	Deaths.	Average Family.
New South Wales ...	1,287	5.25	1,617	4.94	Brazil	2	2.00	...	...
Victoria	1,136	4.02	1,319	3.57	West Indies	9	3.66	5	4.80
Queensland	145	3.13	252	3.57	British Guiana ...	1	11.00	...	...
South Australia ...	445	4.79	509	4.30	Argentine Republic ...	...	...	1	6.00
Western Australia ...	46	5.24	57	4.84	Sth. America (so descd.)	2	7.00	...	...
Tasmania	129	5.20	136	4.93	Arabia	1	2.00	1	8.00
New Zealand... ...	39	3.30	44	2.89	Asia Minor	...	...	1	6.00
Austria-Hungary ...	23	3.70	3	3.00	Ceylon	...	...	1	7.00
Belgium	4	4.25	...	...	China	56	2.35	3	4.66
Channel Islands ...	15	5.93	11	4.81	Dutch East Indies ...	1	9.00	...	...
Denmark	54	4.72	18	5.66	India	51	3.37	17	6.11
England	3,671	5.87	2,682	5.74	Japan	2	3.50	1	...
Finland	8	3.87	1	...	Persia	1	4.00	...	...
France	39	4.82	13	6.46	Philippine Islands ...	2	3.00	...	...
Germany	412	6.15	216	6.59	Straits Settlements ...	1	9.00	...	...
Gibraltar	3	8.00	...	...	Syria	3	2.66	1	1.00
Greece	4	3.00	2	1.50	Ascension Island ...	...	...	1	6.00
Ireland	1,668	5.85	1,949	5.81	Azores	3	5.66	...	...
Isle of Man	4	6.75	4	3.00	Cape of Good Hope ...	...	...	1	13.00
Italy	33	4.57	10	3.50	Cape Verde Islands ...	1	10.00	...	...
Malta	4	4.75	1	3.00	Mauritius	1	16.00	2	3.50
Netherlands	13	4.53	...	...	Seychelles	1	7.00	...	...
Norway	28	3.61	2	3.50	South Africa (so descd.)	7	3.71	9	5.55
Portugal	5	4.12	1	5.00	West Africa (so descd.)	2	2.50	...	...
Rumania	2	4.50	...	...	Fiji	1	...	2	1.00
Russia	20	4.60	7	4.14	New Caledonia ...	1	9.00	...	...
Scotland	1,023	5.55	832	5.77	Norfolk Island ...	1	2.00	2	10.00
Spain	4	3.50	1	7.00	Samoa	1	2.00	...	...
Sweden	48	3.62	8	2.50	Society Islands ...	1	1.00	1	7.00
Switzerland	25	5.96	7	5.14	S. Sea Islands (so descd.)	1	2.00	...	...
Wales	94	6.02	39	5.25	At Sea...	29	5.79	27	7.26
Canada	29	4.72	12	5.00	Not stated	46	3.82	48	4.16
Newfoundland ...	1	12.00	...	...					
United States ...	62	4.76	13	4.92					
Bermudas	...	...	1	12.00	Total	10,751	5.38	9,891	5.20

23. **Occupations of Married Males, and Issue.**—A final tabulation shews the average issue in combination with the occupation of deceased males. When these figures will be available for a number of years they will afford some clue to the much

debated question as to the decrease in the birth rate among various classes of the population.

OCCUPATIONS OF MARRIED MALES, AND AVERAGE ISSUE,

COMMONWEALTH (EXCLUSIVE OF TASMANIA), 1909.

Occupations.	Deaths of Married Males.	Average Family.
Professional class	668	4.71
Domestic class	359	3.95
Mercantile class	1,319	4.68
Engaged in transport and communication	843	4.82
Manufacturing class	1,155	5.05
Engaged in building and construction	738	5.32
Indefinite industrial workers	1,683	5.18
Agricultural class	1,779	6.65
Pastoral class	420	6.27
Working in mines and quarries	920	5.43
Other primary producers	72	5.01
Independent means	548	5.58
Dependents	14	5.21
Occupation not stated	233	5.14
Total	10,751	5.38

§ 4. Graphical Representation of Vital Statistics.

1. **General.**—The progressive fluctuations of the numbers representing the total births and marriages are important indexes of the economic conditions and social ideals of a community. For this reason graphs have been prepared (see pages 227 and 228), shewing these fluctuations from 1860 to 1909, both for the States and the Commonwealth. The facts are very significant from the national point of view and call for serious consideration. To properly appreciate the situation it should be remembered that, normally, the increases of births and also of marriages will be similar to the increase of population. Although the marriage curve shews a falling off in marriages after 1891 (see page 228), it shews a recovery in 1894, and, with the exception of a small fall for 1903, it has continually advanced. The same characteristic is not seen in the curve of births, which discloses a recovering tendency only in 1904.

The table on the following page shews the number of births, marriages and deaths which would have been experienced had the rate for 1890 continued, and reveals the significance of the facts disclosed by the curves. It may be remarked that the death rate has greatly improved, and among other countries, Australia stands in a very favourable position in this respect. At the same time the decline in the marriage rate, overtaken once more in 1907, and the still more serious decline in the birth rate, in a country but sparsely populated, have an obvious and most important bearing on the national future, and on questions concerning the extent to which it is desirable to promote immigration.

ACTUAL BIRTHS, DEATHS, AND MARRIAGES,

EXPERIENCED IN THE COMMONWEALTH DURING THE YEARS 1890 TO 1909, COMPARED WITH THE NUMBER THAT WOULD HAVE OCCURRED IF THE RATES OF 1890 HAD REMAINED IN OPERATION.

Year.	Births.		Deaths.		Marriages.	
	Actual.	Number of Births that would have been experienced if the 1890 birth rate had been in operation.	Actual.	Number of Deaths that would have been experienced if the 1890 death rate had been in operation.	Actual.	Number of Marriages that would have been experienced if the 1890 marriage rate had been in operation.
1890	108,683		44,449		23,725	
1891	110,187	111,802	47,430	45,737	23,862	24,419
1892	110,158	114,502	42,268	46,842	22,049	25,009
1893	109,322	116,617	45,801	47,707	20,631	25,470
1894	104,660	118,734	42,958	48,573	20,625	25,933
1895	105,084	121,002	43,080	49,501	21,564	26,428
1896	100,134	123,212	45,202	50,405	23,068	26,911
1897	101,137	125,419	43,447	51,308	23,939	27,393
1898	98,845	127,371	51,406	52,106	24,472	27,819
1899	100,638	129,088	47,629	52,809	25,958	28,194
1900	102,221	130,848	44,060	53,529	27,101	28,579
1901	102,945	132,662	46,330	54,271	27,753	28,975
1902	102,776	134,873	48,078	55,175	27,926	29.458
1903	98,443	136,478	47,293	55,832	25,977	29,808
1904	104,113	138,305	43,572	56,579	27,682	30,207
1905	104,941	140,511	43,514	57,482	29,004	30,689
1906	107,890	142,908	44,333	58,462	30,410	31,213
1907	110,347	145,365	45,305	59,468	32,470	31,749
1908	111,545	148,093	46,426	60,583	32,551	32,345
1909	114,071	151,166	44,172	61,841	33,775	33,016

2. **Graphs of Annual Births, Commonwealth and States** (page 227).—A striking feature of the graphs of births is the practically continuous increase in the number of births exhibited in the graph for the Commonwealth from 1860 to 1891, and the marked variations of subsequent years. As the curve clearly shews, a turning point in the number of births occurred in 1891, whilst, as regards the separate States, New South Wales and Tasmania date their decline in number from 1893, Victoria from 1891, and Queensland from 1890. In South Australia the corresponding decline took place as early as 1885, while in Western Australia the increase in number of births has been practically continuous throughout.

It is of special interest to note the decline in births associated with the commercial crisis of 1891-3, and also the decline occurring in 1903, an accompaniment of the severe drought of that period.

In the case of New South Wales the graph crosses that of Victoria in 1879, *i.e.*, the births for that year were sensibly identical in the two States. A fairly continuous increase was experienced in the former State from 1860 to 1893, the only marked fluctuation being a sudden decline in 1889 and an equally rapid recovery in 1890. From 1893 to 1898 a somewhat rapid decline again took place, succeeded by a rise, the continuity of which was broken only by a sharp decline in 1903 and recovery in 1904.

In the case of Victoria the graph shews the increase between 1860 and 1880 to have been comparatively slight, the curve being a gradual rise, with fluctuations more or less marked to 1873, with a subsequent decline. From 1880 to 1891 the increase in the number of births is seen to be very rapid and practically continuous, while from 1891 to 1898 an equally sharp and continuous decline was experienced. A further rise and fall

took place between 1898 and 1903, succeeded by a continuous rise from the last-mentioned year to 1907, and a slight fall in 1908, followed by a recovery in 1909.

Starting in 1860 with a lower number of births than any State except Western Australia, the Queensland graph shews that the births increased somewhat rapidly until 1867. The equality in the number of births in Queensland and Tasmania in 1864 is shewn by the Queensland curve crossing the Tasmanian curve at the line for that year. From 1867 to 1882 a continuous though somewhat less rapid increase was experienced, followed by a very rapid rise to 1890, in which year Queensland's maximum number of births was recorded. The South Australian graph is crossed by that of Queensland at the year 1885. From 1890 onwards the number of births has fluctuated somewhat, but has, on the whole, retained a practically stationary position at a height rather less than that of 1890. The most serious variation was a sudden fall in 1903, the drought year, and rapid recovery in 1904, with a further fall in 1905 and a continuous rise since 1906.

The South Australian graph, a slow but practically continuous rise from 1860 to 1885, exhibits the steady increase in the total number of births. This rise is followed by a slow but fluctuating decline to 1903, and a slight recovery to 1909.

The Tasmanian curve may be regarded as made up of five portions, of which the first, from 1860 to 1877, represents a period of very slight variation, with, on the whole an increase; the second, from 1877 to 1884, a period of continuous and moderately rapid increase; the third, from 1884 to 1893, a period of rapid increase; the fourth, from 1893 to 1898, a period of continuous but slow decrease; and the fifth, from 1898 onwards, a period of steady recovery.

The Western Australian curve indicates that an increase, which was practically continuous but very slow, took place from 1860 to 1884, and that a somewhat quicker rate of increase, experienced from 1884 to 1896, was succeeded by a still more rapid and very satisfactory rate of increase from 1896 onwards.

It will be seen that the years in which the highest points were reached by the several curves are as follows:—

State ...	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
Year ...	1909	1891	1909	1885	1906	1908	1909

3. **Graphs of Annual Marriages, Commonwealth and States** (page 228).—The Commonwealth marriage graph from 1860 to 1885 reveals a moderate but somewhat fluctuating increase in the annual number of marriages between 1860 and 1871, a more rapid increase between 1871 and 1879, and a still more rapid increase between 1879 and 1885. From 1885 to 1891 the numbers continued to increase, but with marked fluctuations in rate. The financial crisis associated with the period subsequent to the latter year was accompanied by a strongly-marked decline in the number of marriages, which reached its lowest point in 1894. From that year onwards a fairly rapid recovery was effected, the record for 1891 being exceeded by that of 1897. This progress was maintained until 1902, when the severe drought of that and the succeeding year were collateral with a rapid fall in the number of marriages. An equally rapid recovery, however, has since taken place, and the number of marriages in the Commonwealth during 1909 was greater than in any preceding year.

4. **Graphs of Annual Deaths, Commonwealth and States** (page 229).—The curves, shewing the progression of the annual number of deaths, indicate clearly that the periods for which exceptionally large numbers of deaths occurred were:—(*a*) 1866-7, (*b*) 1875-6, (*c*) 1884-5, (*d*) 1889-1891, (*e*) 1893, (*f*) 1898, and (*g*) 1902-3. It is remarkable that in each of the periods specified the phenomenon of a relatively high number of deaths was experienced in a majority of the States. Thus, as regards 1866-7, all the States except Western Australia and Tasmania were so affected; in 1875-6 all except Western Australia; in 1884-5 all were affected; in 1889 all except Western Australia and South Australia; in 1891 all except Queensland; whilst in 1893 and 1898, and in 1902-3, all were affected. The fact that the periods of high death rates have been practically identi-

cal in the several States furnishes an indication that the excessive mortality has been due to a considerable extent to some common cause operating throughout the Commonwealth.

It may be noted as curious that periods of heavy mortality have occurred at intervals of approximately nine years, viz. :—1866-7, 1875-6, 1884-5, 1893, and 1902-3. There are, however, two marked increases between the third and fourth dates, and one between the fourth and fifth. Thus there is no real indication of the periodicity in the death rate.

Periods in which the number of deaths was exceptionally low are far less clearly defined than those in which the number was high, and the agreement amongst the States is also less complete. The principal periods of low mortality may be said to be 1861, 1869-71, 1879, 1892, 1897, 1900, 1904-5, 1909.

5. **Graphs of Annual Birth, Death, and Marriage Rates and of Rate of Natural Increase—Commonwealth** (page 230).—(i.) *General.* These graphs represent the number of births, deaths, and marriages, and the excess of births over deaths (natural increase) per 1000 of the population of the Commonwealth, for each of the years 1860 to 1909.

(ii.) *Births.* In the case of births, the graph indicates a well marked decline in rate during the period, and represents a fall from 42.56 per 1000 of population in 1860 to 26.40 per 1000 in 1909. This enormous reduction has been subject to small fluctuations during the period under review, but may, on the whole, be said to have been in evidence throughout. There are, however, two periods of arrested decline noticeable, one from 1877 to 1890, and the other from 1898 to the present time. The course of the graph thus indicates a rapid fall from 42.56 in 1860 to 34.99 in 1877, succeeded by a fluctuating but, on the whole, fairly stationary, period to 34.98 in 1890, then a fall even more rapid to 27.15 in 1898, and a further comparatively stationary period to 26.40 in 1909. The lowest point reached, viz., 25.23, was attained in 1903, the year in which the Commonwealth suffered severely from the worst drought it has ever experienced. Since then a small but well defined advance in the birth rate has been in evidence. A declining birth rate is usually due to complex causes, amongst which the variations in the age constitution of the population, and the adoption of preventive measures, are generally considered the most potent.

(iii.) *Deaths.* The three graphs relating to deaths furnish particulars concerning the rates experienced during the period amongst males and females separately, and in the population as a whole, the latter occupying naturally a position between the other two. Throughout the period the rate for males has largely exceeded that for females, but the fluctuations in the two rates have synchronised remarkably, indicating that the conditions which have been responsible for the marked variations which have occurred from time to time have affected males and females alike. On the whole, the graphs furnish clear evidence of a satisfactory decline in the death rate of the Commonwealth, a fall having taken place from 20.86 in 1860 to 10.22 in 1909. The graphical representation of the death rates brings into prominence five years in which the rates were exceptionally high when compared with those of adjacent years. These years are 1860, 1866, 1875, 1884, and 1898. The principal cause of the excessive rate of 1860 was the prevalence in that year of measles, scarlatina, and diphtheria, while the high rates of 1866, 1875, and 1898 were also largely due to epidemics of measles. Prior to 1892, when a rate of 12.91 was experienced, the lowest general death rate for the Commonwealth was that of 1871, viz., 13.24. The highest male death rate for the period was 20.97 in 1860, and the lowest 11.20 in 1909. For females the highest was 20.71 in 1860, and the lowest 9.13 in 1909. The difference between the male and female rates has, since 1869, been fairly constant, and has ranged between 1.97 and 3.44, with a mean value of about 2.7.

(iv.) *Marriages.* In the case of the graph representing marriage rates, the fluctuations are less abrupt than in the case of the birth-rate and death-rate graphs, and the rate for 1909, the final year of the period, viz., 7.82, does not differ very considerably

from that of 1860, which was 8.42. The lowest marriage rate for the period was that of 1894, viz., 6.08, marking the culmination of the commercial and financial depression indicated by the declining rates from 1888 onwards. From 1894 to the present time a satisfactory increase has been in evidence, disturbed only by the sharp decline which, in 1903, accompanied the severe drought experienced in the Commonwealth in that year.

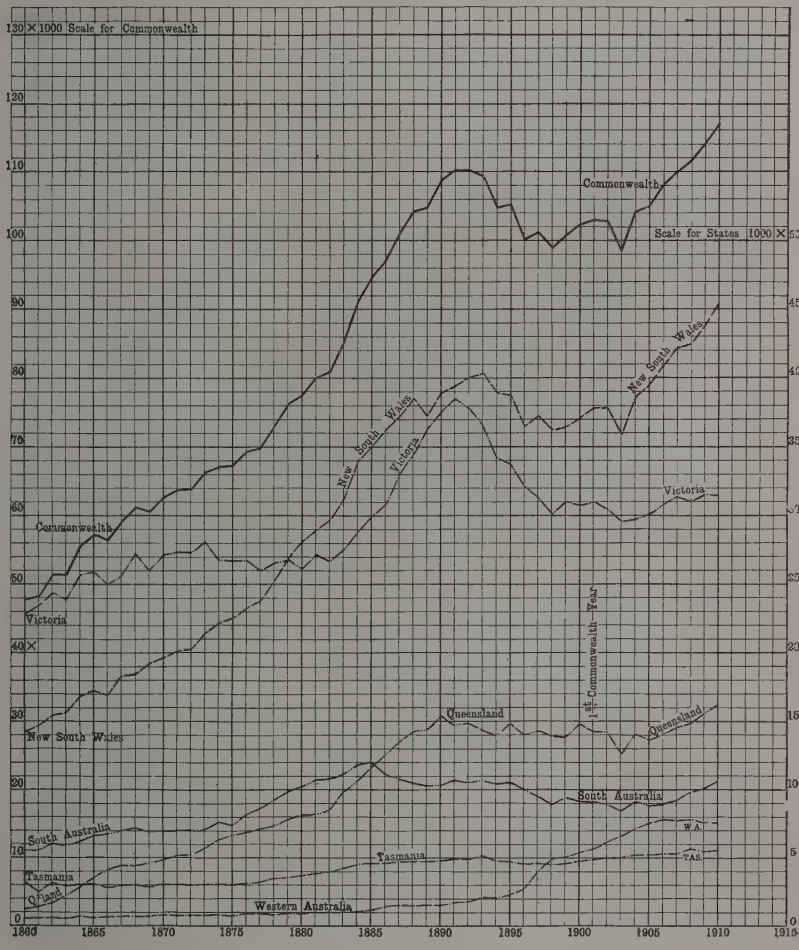
(v.) *Natural Increase.* This graph, which represents the excess of births over deaths per 1000 of population, exhibits marked fluctuations arising from the combined fluctuations in birth and death rates. Thus, corresponding to the high death rates of 1860, 1866, 1875, and 1898, there are exceptionally low rates of natural increase, accentuated in the last-mentioned year by a comparatively low birth rate. A combination of low birth rate and comparatively high death rate was also responsible for a very low rate of natural increase in 1903. The highest rate of natural increase for the period was 26.58 in 1864, and the lowest 13.03 in 1898.

6. **Graphs of Annual Birth Rates—States** (pages 231 and 232).—These graphs furnish for the several States information similar to that supplied in the graph on page 230 for the Commonwealth as a whole. It will be seen that in every case the total effect has been an extensive decline in rate, subject to very marked fluctuations. In all the States the period from 1875 to 1885 was one of arrested decline, if not of actual advance, in the birth rate. With the exception of the very low rate accompanying the drought in 1903, the variations in any of the States since 1901 have not been very marked, and in some cases a slight tendency to increase is in evidence.

The highest birth rates during the period were as follows:—New South Wales (1864), 44.00; Victoria (1862), 44.71; Queensland (1860), 47.93; South Australia (1862), 45.44; Western Australia (1860), 38.96; and Tasmania (1884), 36.63. The following were the lowest rates for the period:—New South Wales (1903), 25.41; Victoria (1903), 24.46; Queensland (1903), 24.62; South Australia (1903), 23.25; Western Australia (1896), 23.44; Tasmania (1899), 27.43.

7. **Graphs of Annual Death Rates—States** (pages 233 and 234).—These graphs furnish for the several States similar information to that given for the Commonwealth as a whole in the diagram on page 230, and indicate in each case a satisfactory decline in death rate. It may be noted that an exceptionally high death rate was experienced in all the States in 1875, and that a similar uniformity, though on a smaller scale, is observable for the year 1898, the principal cause in each case having been an epidemic of measles. The highest death rates experienced during the period were as follows:—New South Wales (1867), 19.79; Victoria (1860), 22.77; Queensland (1866), 25.96; South Australia (1875), 19.97; Western Australia (1884), 21.54; and Tasmania (1875), 19.99. The following were the lowest death rates for the period:—New South Wales (1909), 9.84; Victoria (1909), 11.24; Queensland (1906), 9.56; South Australia (1909), 9.37; Western Australia (1909), 9.98; and Tasmania (1909), 10.00.

GRAPHS SHEWING TOTAL ANNUAL BIRTHS IN THE COMMONWEALTH AND STATES OF AUSTRALIA, 1860-1910.



(See Table page 167.)

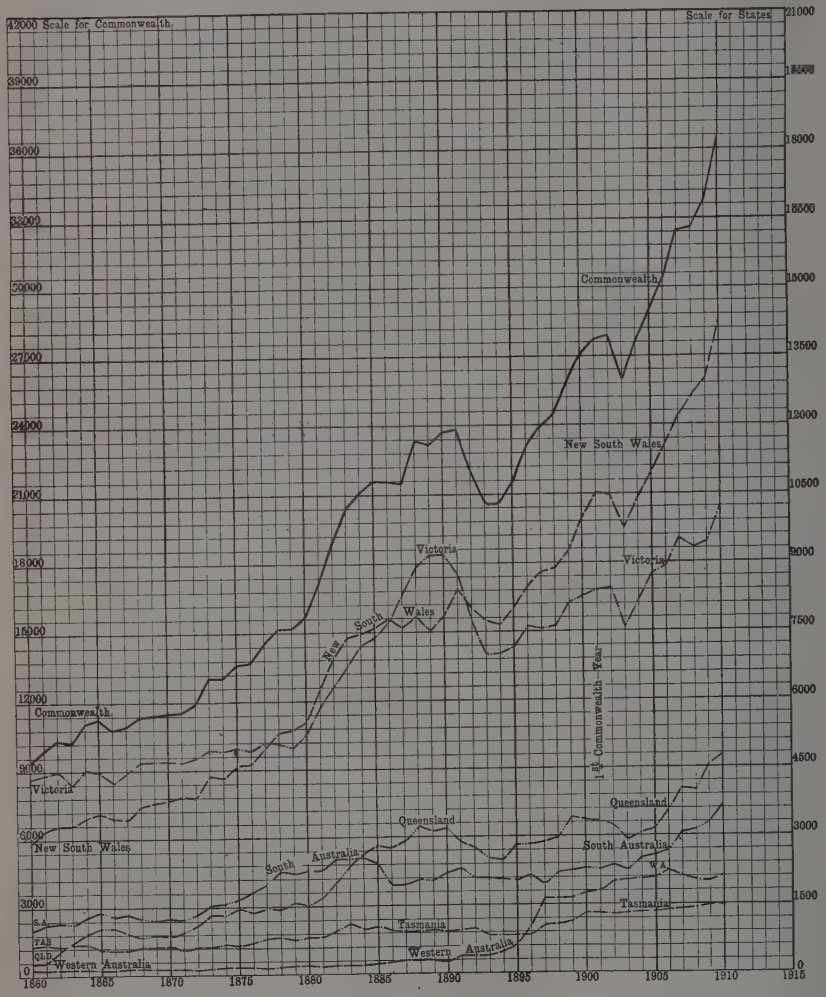
EXPLANATION OF GRAPHS.—The base of each small square represents an interval of one year for both Commonwealth and States, and the vertical height represents 2000 persons for the Commonwealth, and 1000 for the States.

The scale on the left relates to the Commonwealth, and that on the right to the States.

The distances upwards from the common zero lines of the States and Commonwealth, marked 0, denote the total annual number of births in the States and Commonwealth, the scale of the latter being reduced one-half.

The names of the States to which the graphs refer are written thereon, and the characters of the lines used are as follows:—Commonwealth, ————————; New South Wales, — — — — —; Victoria, — - — - — - —; Queensland, — — - — — - — —; South Australia, — - — - — - —; Western Australia, — — — - — — - — —; Tasmania, — — - — - — - — —.

GRAPHS SHEWING TOTAL ANNUAL MARRIAGES IN THE COMMONWEALTH AND STATES OF AUSTRALIA, 1860-1910.



(See Table page 179.)

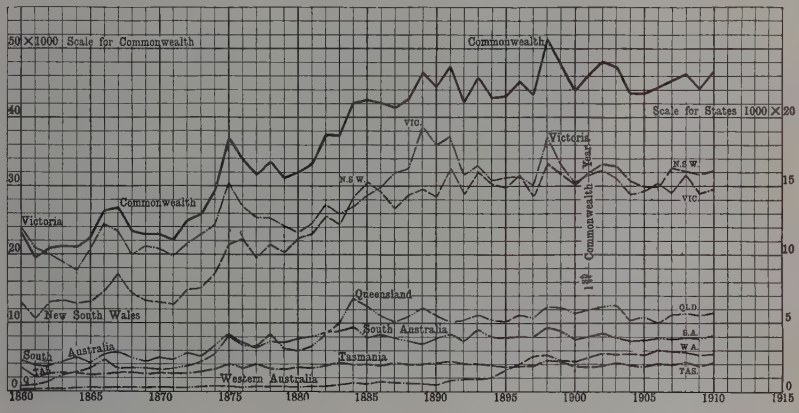
Explanation of Graphs.—The base of each small square represents an interval of one year for both Commonwealth and States, and the vertical height represents 600 marriages for the Commonwealth and 300 for the States.

The scale on the left relates to the Commonwealth, and that on the right relates to the States.

The distances upwards from the zero line, marked 0, denote the total annual number of marriages in the States and Commonwealth, the scale of the latter being reduced one-half.

The names of the States to which the graphs refer are written thereon, and the lines used are similar to those for births on page 227.

GRAPHS SHEWING TOTAL ANNUAL DEATHS IN THE COMMONWEALTH AND STATES OF AUSTRALIA, 1860-1910.



(See Table page 188.)

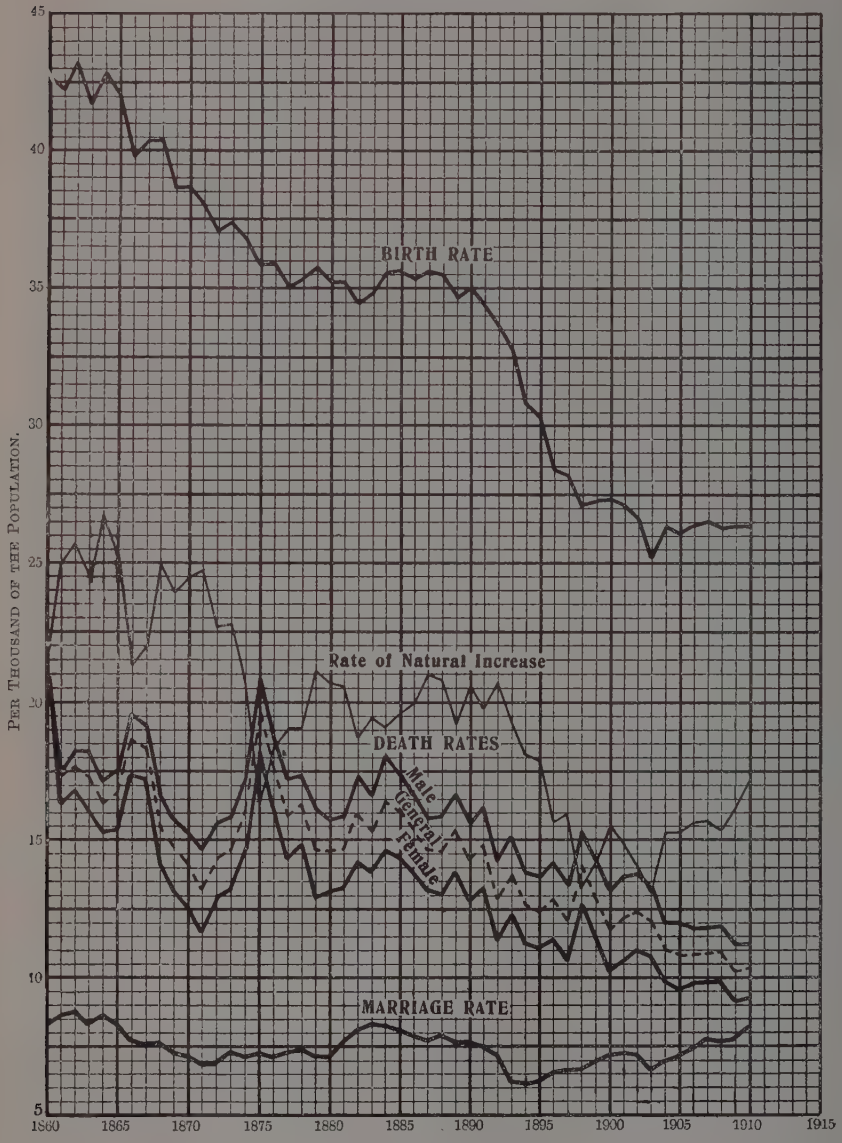
EXPLANATION OF GRAPHS.—The base of each small square represents an interval of one year for both Commonwealth and States, and the vertical height represents 2000 persons for the Commonwealth and 1000 for the States.

The scale on the left relates to the Commonwealth, and that on the right relates to the States.

The distances upwards from the common zero line for States and Commonwealth, marked 0, denote the total annual number of deaths in the States and Commonwealth, the scale of the latter being reduced to one-half.

The names of the States to which the curves refer are written thereon, and the lines used are similar to those for births on page 227.

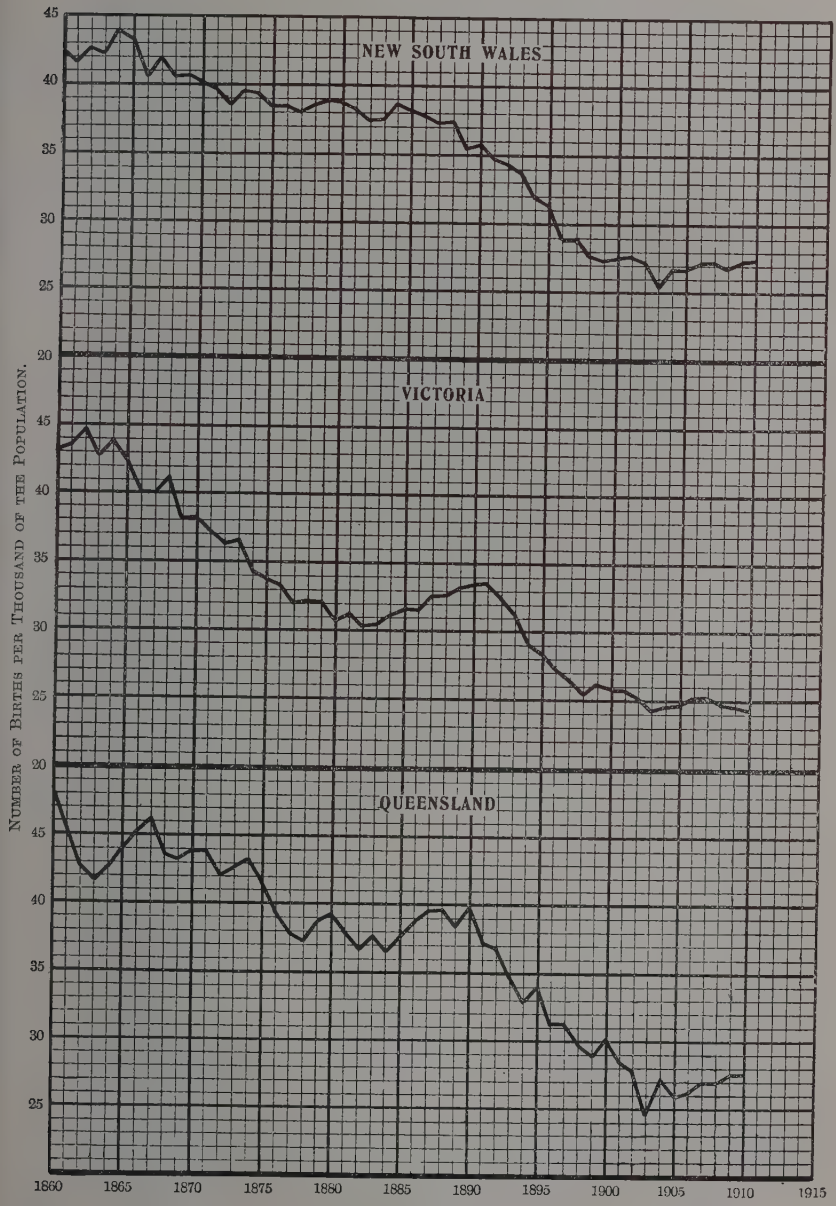
GRAPHS SHEWING GENERAL BIRTH NATURAL INCREASE, DEATH (MALE, GENERAL AND FEMALE), AND MARRIAGE RATES IN THE COMMONWEALTH OF AUSTRALIA, 1860-1910.



(See pages 167, 180, 188 and 226.)

EXPLANATION OF GRAPHS.—The base of each small square represents one year's interval, and the vertical height, according to the character of the curve, one half per thousand o the population—the basic line being five per thousand of the population.

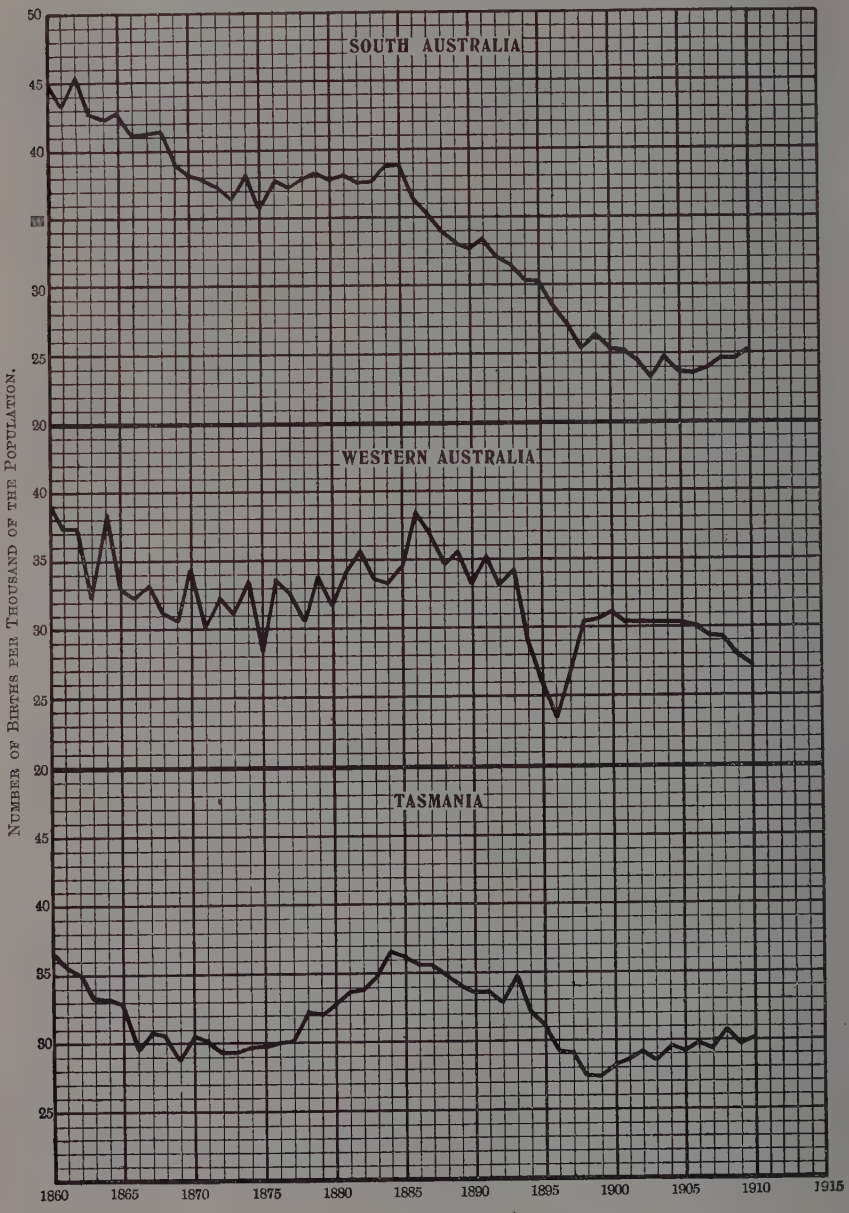
GRAPHS SHEWING BIRTH RATES IN THE STATES OF NEW SOUTH WALES, VICTORIA, AND QUEENSLAND, 1860-1910.



(See Table page 167.)

EXPLANATION OF GRAPHS.—The base of each small square represents one year's interval, and the vertical height one birth per thousand of the population—the basic line for each State being twenty per thousand of the population.

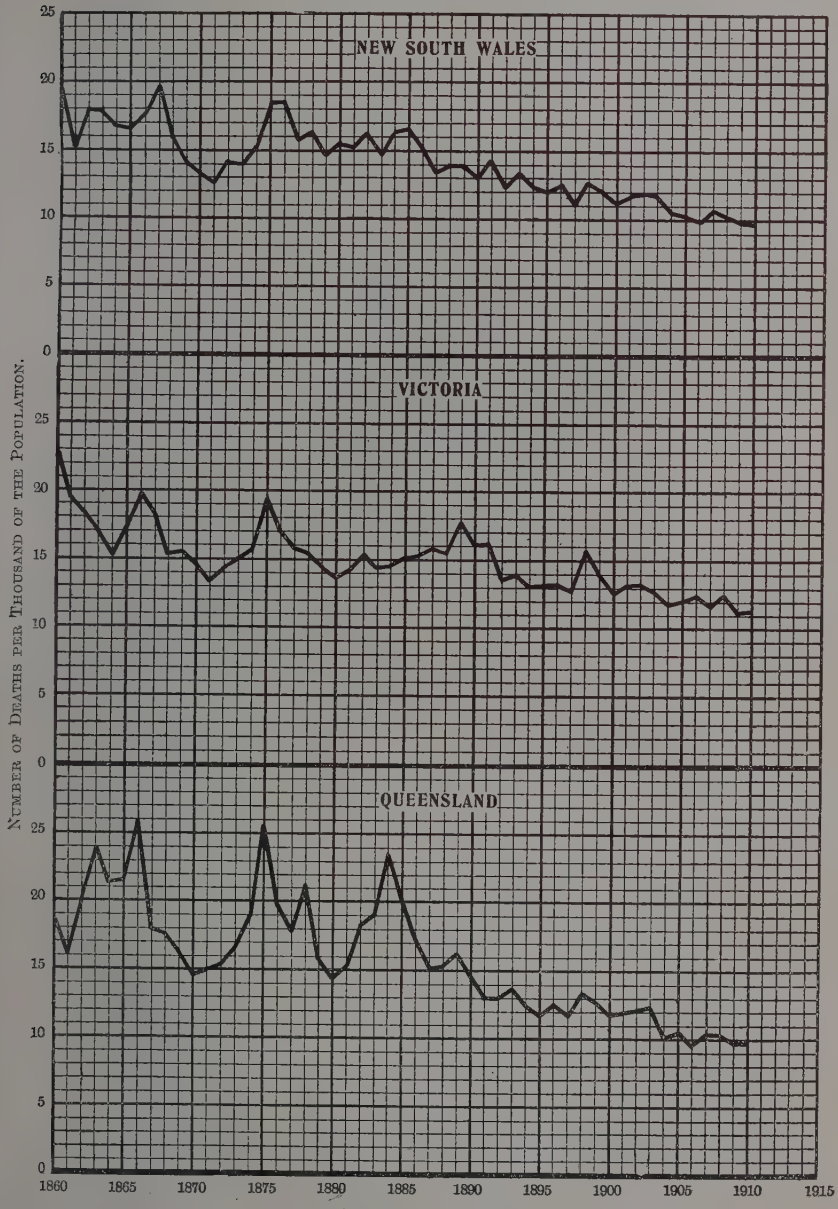
GRAPHS SHEWING BIRTH RATES IN THE STATES OF SOUTH AUSTRALIA, WESTERN AUSTRALIA, AND TASMANIA, 1860-1910.



(See Table page 167.)

EXPLANATION OF GRAPHS.—The base of each small square represents one year's interval, and the vertical height one birth per thousand of the population—the basic line for each State being twenty per thousand of the population.

GRAPHS SHEWING DEATH RATES IN THE STATES OF NEW SOUTH WALES, VICTORIA, AND QUEENSLAND, 1860-1910.



(See Table page 188.)

EXPLANATION OF GRAPHS.—The base of each small square represents one year's interval, and the vertical height one death per thousand of the population. The zero for each State is shewn by a thickened line.

GRAPHS SHEWING DEATH RATES IN THE STATES OF SOUTH AUSTRALIA, WESTERN AUSTRALIA, AND TASMANIA, 1860-1910.



(See Table page 188.)

EXPLANATION OF GRAPHS.—The base of each small square represents one year's interval, and the vertical height one death per thousand of the population. The zero for each State is shewn by a thickened line.

SECTION VI.

LAND TENURE AND SETTLEMENT.

§ 1. Introduction and Early History.

1. **Introduction.**—The various forms of land tenure which have been adopted with a view to securing the settlement of a large and sparsely populated country like Australia are not only of interest to the immigrant, but also have an important and immediate bearing upon the welfare of the community. An attempt was made in Year Book No. 2, to give a comprehensive description, in a classified and co-ordinated form, of the land systems of the several States, and to thus obviate the necessity of having recourse to the numerous Acts of Parliament and other documents dealing with the subject. That description has been brought up to date and is repeated in this volume *in extenso* in so far as it relates to existing forms and conditions of tenure; the historical matter dealing with the development of the land legislation has, however, been considerably condensed in the last two issues of the Year Book. For a more complete account of the land legislation in the individual States, reference may therefore be made to Year Book No. 2 (pp. 263 to 272).

Though there is a certain similarity between the principal forms of tenure in the States of the Commonwealth, the difficulty of the task of rendering a succinct and co-ordinated account of the land systems is increased by the variety in detail of the terms and conditions imposed, and also by the different manners in which statistics dealing with the subject are presented by the several States. In the account given in this section the classifications ordinarily adopted in the several States have necessarily not always been adhered to, the tenures having been reclassified in accordance with the scheme indicated hereunder. (See § 4.) Statistics relating to various forms of tenure have also, where necessary, been regrouped according to that scheme.

In order to preserve continuity, and in order that the general trend of land legislation may be comprehended, a short historical account of land settlement in the Commonwealth is first given hereunder.

2. **First Grants of Land made in New South Wales, 1789.**—In the early days of Australian colonisation, land was alienated by grants and orders from the Crown. The first instructions, issued on the 25th April, 1787, authorised the Governor to make grants only to liberated prisoners, but by further instructions issued by the Secretary of State in 1789, the privilege of obtaining grants was extended to free immigrants and to such of the men belonging to the detachment of marines serving in New South Wales—which then included the whole of the eastern part of Australia—as were desirous of settling in the colony; the maximum grant was not to exceed 100 acres, and was subject to a quit-rent of one shilling per annum for every fifty acres, to be paid within five years of the date of issue. In many cases these grants were made conditional upon a certain proportion of the land being cultivated, or upon certain services being regularly performed, but these conditions do not seem to have been enforced. The first settler was a convict of the name of James Ruse, who, having been liberated, entered on his farm of thirty

acres at Parramatta on the 25th February, 1789. The first free settlers arrived in the *Bellona* on the 15th January, 1793, and took up land at Liberty Plains, about eight miles from Sydney.

3. **Grants of Town Allotments in Sydney, 1811.**—Until the year 1811 all the land which had hitherto been alienated lay outside the borders of the town of Sydney, but in that year the Governor, with the authority of the Secretary of State, commenced to grant town allotments on lease only, for periods of fourteen or twenty-one years; the rents on these leases varied considerably from time to time according to the discretion of the Governor, by whom they were imposed. In 1824 and 1826 further regulations relating to grants to immigrants were issued by the Colonial Office. In 1829 leases were entirely abolished, grants of freehold estates being made in lieu, but five years later they were, however, again introduced. As regards the payment of quit-rents generally, it appears that they were collected in a very perfunctory manner, and in later years the Government offered special inducements for their redemption.

4. **Introduction of Land Sales, 1825.**—By this time the principle of alienation of land by sale to free settlers had already been introduced under Sir Thomas Brisbane, and under a Government order of the 24th March, 1825, land was allowed to be sold by private tender, at a minimum price of five shillings an acre, no person being allowed to buy more than 4000 acres, nor any family more than 5000 acres. The disposal of lands by sale did not, however, interfere with the ordinary method of alienating town allotments and country lands by grants subject to the payment of quit-rents. In 1830 the division of the eastern part of the colony into counties, hundreds and parishes had been completed by a commission of three persons appointed for that purpose. Dividing the territory into nineteen counties, covering about 34,505 square miles, they made a valuation of the whole of the lands with a view to fixing a fair price for future sales. This territory comprised a belt of land in what is now the middle of the Eastern Division of New South Wales, extending from the coast nearly as far as the boundary of the Central Division, and from the Macleay River in the north to the Moruya River in the south.

5. **Free Grants Abolished, 1831.**—On the 14th February, 1831, it was notified by a Government order that no Crown lands were in the future to be disposed of except by public auction, the minimum price for country lands being fixed at five shillings an acre, which was raised to twelve shillings an acre in 1839, power being given in the latter year to select, at the upset price, land for which there was no bid at the auction, or upon which the deposit paid at the time of sale had been forfeited. This was the first introduction of the principle of selection into the land laws of Australia, and it was then only applied to lands which had been put up for sale by auction.

6. **Land Regulations Issued under Imperial Acts, 1842 and 1847.**—In 1842 regulations made under an Imperial Act of Parliament came into force. The principle of sale by auction was maintained, the lands were to be surveyed before being put up for sale, and the upset price was fixed at twenty shillings an acre. It was provided that, subject to a primary charge for survey, half the proceeds of sales were to go to defray the cost of immigration of persons to the colony in which the revenue accrued. Special blocks of 20,000 acres formed an exception. They might be sold, before survey, by private contract at not less than the upset price. Under Orders in Council, issued on the 9th March, 1847, in pursuance of the provisions of the Waste Lands Act of 1846, a new classification of lands took place, and the territory was divided into—(*a*) settled districts; (*b*) intermediate districts; and (*c*) unsettled districts. Under this Act the principles of sale by auction or by private contract were maintained, but a system was introduced by which leases were granted for various terms in each of the three divisions for pastoral purposes only. During the currency of such a lease the lessee could at any time purchase the freehold at the upset price of £1 an acre, and on the expiration of the term he had a pre-emptive right at the same price over all or any part of the land.

7. **Occupation of Pastoral Lands.**—In the early days land was held for pastoral purposes under tickets of occupation, which ceased to be issued on the 1st May, 1827, after which date pastoral lands could only be occupied under annual licenses, upon payment of a quit-rent of twenty shillings per 100 acres, and had to be vacated at six months' notice. Under the Imperial Act of 1846, referred to above, an entirely new system for the occupation of pastoral lands was introduced. Under this system fixity of tenure of lease was granted, and the fee was paid upon the stock-carrying capacity of the run. In the unsettled districts the term of the lease was fixed at fourteen years; in the intermediate districts the term was for eight years; while in the settled districts the yearly tenure was retained.

8. **First Land Legislation of Individual States.**—The legislation of 1846 remained in force in New South Wales until the year 1861; and in the States of Victoria and Queensland, which were separated from the mother colony in 1851 and 1859 respectively, until repealed by Acts of the State Parliaments. The discovery of gold in 1851, and the consequent rush of population to Australia, greatly changed the conditions of colonisation. The various States of the Commonwealth have found it to their advantage to adopt different systems for securing the settlement of an industrial and agricultural population. The land regulations of Victoria, Queensland, and Tasmania were identical with those in force in New South Wales until the dates of the separation of these States from the mother State, and at the present time practically the same form of conditional occupation with deferred payments exists in all four States. In Western Australia and in South Australia the influence of the legislation of New South Wales was not felt. In these States new conditions prevailed; under a different set of circumstances settlement was effected by legislation of a special and novel character, and it was not until a later date that their land laws were brought more into line with those of the eastern States.

9. **New South Wales Areas Alienated between 1787 and 1859.**—The subjoined statement shews the areas of Crown lands which had been alienated, both in the mother colony and in the settlements administered from Sydney, from the date of the foundation of the colony in 1787 up to the dates of separation of these settlements by their constitution as separate colonies :—

NEW SOUTH WALES ALIENATIONS,

UP TO SEPARATION OF VARIOUS SETTLEMENTS, BETWEEN 1787 AND 1859.

Particulars.	In New South Wales Proper (N.S.W.).	In Van Diemen's Land[1] (Tasmania).	In Port Phillip District[1] (Victoria).	In Moreton Bay District[1] (Q'nsland).
	Acres.	Acres.	Acres.	Acres.
From 1787 to 1823	520,077	57,423	...	...
From 1824 to 1836	4,268,750	...	...	...
From the first settlement in Port Phillip in 1837 to 1841	1,110,544	...	222,214	...
From the first settlement in Moreton Bay in 1842 to the separation of Port Phillip in 1851	48,119	...	121,702	2,521
From 1852 to the separation of Moreton Bay in 1859	899,283	...	...	58,398
Total from 1787 to 1859 inclusive ...	6,846,773	57,423	343,916	60,919

1. Particulars for the States *after* their separation are shewn in subsequent paragraphs.

§ 2. Land Legislation in Individual States.

1. **New South Wales.**—After the excitement of the first rush, following the discovery of gold in 1851, had died away, the interest in gold-digging commenced to decline, and the number of people desiring to settle on the land greatly increased. The question of land settlement had accordingly to be dealt with in an entirely new spirit, to meet the requirements of a class of immigrants differing greatly from those contemplated by the Act of 1847.

(i.) *The Lands Act and Occupation Act 1861.* The public interest in the question which thus arose resulted in the passing of the Crown Lands Act and the Occupation Act in 1861, under the leadership of Mr. (afterwards Sir) John Robertson. The object of these Acts was to facilitate the establishment of an agrarian population side by side with the pastoral tenants. It had hitherto been difficult for men with limited capital to establish themselves with a fair chance of success, but under the new principle of free selection before survey, introduced by Robertson's Act, country lands were sold in limited areas of from 40 to 320 acres at a price of £1 an acre, payable partly by deposit, and carrying interest on the balance outstanding at the rate of 5 per cent. per annum. By the Occupation Act of 1861 the colony was divided into first and second-class settled districts and unsettled districts, and the whole of the pastoral leases were left open to the operations of free selectors. The system of unconditional sales was still continued under the Act of 1861, and remained in force until its abolition in 1884. With many benefits there was also considerable mischief as a result of the operation of Robertson's Act, chiefly for the reason that land, being held under pastoral leases not exempt from free selection, could be the subject of speculative selecting without *bonâ fide* intention of settlement.

(ii.) *Acts now in Force.* The Crown Lands Act of 1884 and the supplementary Act of 1889 were accordingly passed to remedy this state of things. These measures, while maintaining the principle of free selection before survey, were designed to give fixity of tenure to the pastoral lessees, and at the same time incidentally tended to restrict the area sold unconditionally. Pastoral leases were required to be surrendered to the Crown and divided into two equal parts. One of these parts was returned to the lessee under a lease with fixity of tenure for a certain term of years; the other half, called the resumed area, the lessee was allowed to hold under an annual occupation license, but this half was always open to selection.

It was found in course of time that the Acts of 1884 and 1889 did not succeed in attaining the objects for which they were designed; settlement proceeded very slowly, and the accumulation of land into large estates continued. Parliament has been led to introduce entirely new principles into the agrarian legislation of the State, embodied in the Crown Lands Acts 1895 to 1909, the Labour Settlements Act 1902, the Closer Settlement Acts 1904 to 1909, and the Closer Settlement Promotion Act 1910, which, while still giving fixity of tenure to pastoral lessees, retain the principle of free selection before survey, and to offer *bonâ fide* settlers special inducements by the introduction of new forms of tenure on easy terms and conditions.

(iii.) *The Western Lands Acts.* All lands in what is known as the Western Division of New South Wales are now subject to the special provisions of the Western Lands Acts 1901 to 1909. The registered holder of a lease of any description or of an occupation license of land could bring his lease or license within the provisions of the Western Lands Act by application before the 30th June, 1902. If he did not so apply, the lease or license is dealt with as if the Act had not been passed, and the Western Land Board, constituted under the Act, is to be deemed to be the Local Land Board to deal with such cases. All leases issued or brought under the provisions of the Western Lands Acts expire

on the 30th June, 1943, except in cases where part of the land leased is withdrawn for the purpose of sale by auction or to provide small holdings, in which case the Governor may add to the remainder of the lease a term, not exceeding six years, as compensation for the part withdrawn.

2. **Victoria.**—The early history of land settlement in Victoria is intimately bound up with that of New South Wales. For the first fifteen years of its existence, during which period it was known as the District of Port Phillip, the alienation of Crown lands was regulated by the Orders in Council of the mother State, to which orders reference has already been made. In the month of September, 1836, the Port Phillip district was proclaimed open to settlement, and the principle of the sale of unoccupied land by auction was introduced. The first Port Phillip land sale took place on the 1st June, 1837, and the first Portland Bay sale on the 15th October, 1840. In the year 1841 the upset price of country lands, in New South Wales limited to twelve shillings per acre, was specially raised to twenty shillings per acre in the Port Phillip district.

The Orders in Council made under the Imperial Acts of 1842 and 1846, referred to above, remained in force until 1860, when an Act (known as Nicholson's Act) was passed by the Victorian Government, which, after making provision for special reserves for mineral purposes, etc., divided all Crown lands into country and special classes. The former were available after survey for selection in allotments of from forty to sixty acres, while special lands, situated near towns, railways, rivers, etc., were sold quarterly by auction at an upset price of £1 an acre.

(i.) *Duffy's Act 1862.* In 1862 free selection before survey was introduced by Duffy's Act, which provided for the setting apart of large agricultural areas, within which land could be selected at a uniform price of £1 per acre. Alternative conditions were imposed to the effect that certain improvements should be effected, or that part of the land should be placed in cultivation, and modifications were introduced as to the mode of payment. As regards pastoral lands, license fees and assessments of stock were abolished, and provision was made for the payment of rent for runs according to their value, based on their stock-carrying capacity. This Act was amended in 1865.

(ii.) *The Land and Pastoral Acts 1869.* The next legislation on the subject of land settlement was in 1869, in which year a Land Act and a Pastoral Act were passed, consolidating and amending all previous land legislation. The system of free selection before survey, as applied to all unoccupied Crown lands, was retained, but the selected area was limited to 320 acres, and was at the outset to be held under license for a term of three years, during the first two and a-half years of which the selector had to reside on the land, fence it, and cultivate a certain proportion of it. At the end of the period of license, the selector could either purchase the land outright or he might obtain a further lease of seven years, with the right to purchase at any time during the term. The pastoral Act of 1869 provided for the occupation of the land for pastoral purposes under two systems, either as runs under license or lease or under grazing rights. The Land Act of 1869 was amended in 1878, when the conditions of selection were greatly restricted, the immediate effect being a considerable falling-off in the areas taken up.

(iii.) *Acts now in Force.* In 1884 the whole system of land occupation and alienation, except as regards Mallee lands (see below), was altered. This measure was again modified by the Acts of 1890, 1891, 1893, 1896, 1898, and 1900, the whole being consolidated in the Land Act 1901, which came into force on the 31st December of that year, and which has in turn been modified by the amending Acts of 1903, 1904, 1905, and 1909. The subject of closer settlement was dealt with in the Land Act 1898 and 1901 and amendments, until the introduction of the Closer Settlement Act 1904, which has been amended in 1906, 1907, and 1909. Other special forms of tenure have been provided for by the Settlement on Lands Act 1893, and the Small Improved Holdings Act 1906; these, however, are now embraced in the Land Acts and Closer Settlement Acts respectively. It is proposed to pass an amending and consolidating Land Act at an

early date. Particulars of any amending Acts which may be passed prior to the publication of this book may be found in the Appendix.

(iv.) *Mallee Lands.* The territory known generally as the "Mallee"—so named from the scrub with which the country, in its virgin state, was covered—comprises an area of about 11,000,000 acres in the north-western district of the State, and of this area more than half is unalienated and available for occupation. The soil is mostly of a light chocolate and sandy loam character, covered with scrub, interspersed with plains lightly timbered with pine, buloke, belar, sandalwood, etc. The scrub can be cleared at a moderate expenditure, and the extension of railway facilities and of successful systems of water-supply should bring large districts in this country into prominence as a field for agricultural enterprise.

Originally Mallee lands could be acquired under lease either as "Mallee Blocks" or "Mallee Allotments." The former were very large areas of the back country, and the term was for a period of twenty years, which has now expired, and these areas are now only let under annual grazing licenses until required for selection. "Mallee Allotments" could be leased up to a maximum area of 20,000 acres, but the area was latterly restricted to the area which could be selected. Leases of "Mallee Allotments" expiring on the 31st December, 1909, were extended to the 31st December, 1912, but no such leases can now be issued. Alienation by selection was allowed by the Land Act 1896, and lands in the Mallee are now dealt with by a special part of the Land Act of 1901 (see 6, 3, iii), as amended in 1904 and by the Murray Settlements Act 1907.

3. **Queensland.**—Previous to the year 1859 the Moreton Bay district, as it was then called, formed a portion of New South Wales. The early history of its method of land settlement is thus included in that of the mother colony. With separation from New South Wales, and the election of a Legislative Assembly of its own, the district of Moreton Bay—or, as it was henceforth to be known, the Colony of Queensland—entered on a new era of prosperity. The first Parliament of the new colony, which assembled in 1860, passed three Acts dealing with Crown lands.

(i.) *Pastoral Leases.* The first two of these (24 Vic., Nos. 11 and 12) dealt chiefly with the occupation of land for pastoral purposes, and their provisions differed but little from those adopted in the mother colony. These measures were amended by Acts passed in 1862, 1863, and 1864. In 1868 an Act was passed providing more land for agricultural settlement by the resumption of land from runs as required, unless the proprietors voluntarily surrendered for selection one-half of their runs, and accepted a ten years' lease for the remainder. The occupation of lands for pastoral purposes was further dealt with by Acts passed in 1869, 1876, and 1882.

(ii.) *General Settlement.* The third measure (24 Vic., No. 15), passed in 1860, provided for general settlement. This was also more an expansion of the existing law than the adoption of a new line of policy. This Act was amended in 1863 and 1864, and again in 1866, when a comprehensive measure was passed practically introducing the principle of deferred payment, although styled leasehold with the right of purchase. The principle of selection before survey was extended by the Crown Lands Alienation Act 1868, the Homestead Areas Act of 1872, and the Crown Lands Alienation Act of 1876. These measures, with slight amendments, continued in force until 1884, when the Crown Lands Act was passed. This Act introduced the system of grazing farms and provided for the constitution of a Land Board, which was the forerunner of the Land Court established by the Act of 1897. The complaints of pastoral lessees as to insecurity of tenure were also met by the Act of 1884, which, while securing prescribed proportions for settlement, gave the lessees fixed tenures of the remainder of their holdings for fifteen years, increased later to twenty-one years, subject to prescribed powers of resumption, and later again to twenty-eight years on the holdings being enclosed by rabbit-proof fences.

(iii.) *Acts now in Force.* The Act of 1884 was, after various amendments, repealed by the Land Act 1897, which was in turn amended in 1902, 1905, 1908, and 1909, and which re-enacted with modification the provisions relating to grazing farms, abolished the exclusively leasehold tenure as applied to agricultural farms, restoring to them the earlier principle of conditional purchase, but on more liberal terms. Nearly all pastoral leases are now held under the Act of 1897, in conjunction with the Land Act 1902. Under the provisions of the Agricultural Lands Purchase Acts 1894 to 1905, power was given to the Government to repurchase lands for the purpose of closer settlement; these Acts have now been consolidated and repealed by the Closer Settlement Act of 1906. Under the Co-operative Communities Land Settlement Act of 1893, as amended in 1894 and 1895, provision was made for the establishment of co-operative communities; these Acts were, however, repealed by the Land Act Amendment Act 1909. The Special Agricultural Selections Acts 1901 to 1904 were passed for the purpose of promoting closer settlement upon agricultural lands, by affording to bodies of settlers special facilities for the acquirement of agricultural selections to be held in conjunction with portions in adjacent agricultural townships; these Acts were also repealed by the Land Acts Amendment Act 1909, which now provides for group selections by bodies of settlers. An important Bill was introduced in Parliament in 1910, the object of which is to consolidate, amend, and simplify the law relating to the occupation and alienation of Crown lands. The Bill proposes to take the place of thirty-two Acts relating to Crown lands repealed in 1908 and 1909, and also by the new Bill.

4. **South Australia and the Northern Territory.**—In the year 1834 a Bill for the colonisation of South Australia was passed by the British Government, and under this Act the colony was founded. It provided for the appointment by the Crown of three or more Commissioners to carry certain parts of the Act into execution; they were to declare all the lands of the colony, excepting areas reserved for roads and footpaths, to be open to purchase by British subjects, and to make regulations for the survey and sale of such lands at such price as they might deem expedient, and for letting unsold lands for periods of not less than three years. They might sell the land by auction or otherwise, but for ready money only, at a uniform price, and at not less than twelve shillings per acre. The principles on which the colony was established originated with Mr. Edward Gibbon Wakefield. The main idea in Wakefield's scheme was the sale of waste or unappropriated lands at a high price, and the application of the revenue thus obtained to the introduction of immigrants, so as to secure a constant supply of hired labour for the cultivation of the land, and for the progress of settlement. Other leading features of the scheme were that no convicts should be transported, that no State Church should be established, and that the new colony should be financially independent, and not be a charge on Great Britain.

The Wakefield system fell into disfavour owing to the financial crises of the early forties, and soon had to be modified. It was not until 1872, however, that an Act was passed more in conformity with the legislation of the neighbouring States, and giving to settlers with only a small amount of capital an opportunity of settling upon the lands of the Crown under fair conditions and with a reasonable chance of success. The Act of 1872 was amended from time to time, until it was repealed and its provisions consolidated by the Crown Lands Act 1888. The principles of closer settlement were introduced by the Closer Settlement Act of 1897, which was amended in 1902, while village settlements were dealt with by the Village Settlements Act 1901.

(i.) *The Torrens Act.* Reference may here be made to the Real Property Act, which was originated in South Australia by the late Sir R. R. Torrens in the year 1858, and which has been adopted in all the States of the Commonwealth, and also in New Zealand. The objects of this Act are to give security and simplicity to all dealings with land, by providing for such registration of title as shall admit of all interests which may appear upon the face of the registry being protected, so that a registered title or interest shall practically never be affected by any claim or charge not registered. By this system everyone who acquires an estate or interest in land, upon being registered as owner

thereof, obtains a title, if not absolutely at least practically secure against everyone whose claim does not appear upon the registry; and the two elements of simplicity and security as regards the acquisition of land appear to be effectually attained.

(ii.) *Acts now in Force.* The Act of 1888, referred to above, in course of time underwent numerous amendments, the whole being repealed and consolidated by the present Crown Lands Act of 1903, which also repealed the previous Closer Settlement and the Village Settlement Acts, and which in turn was amended in 1905 and 1906. A Bill to amend the provisions relating to Closer Settlement was introduced in 1910. Provisions as to the occupation of land for pastoral purposes are now contained in the Pastoral Act 1904, while special provisions for granting leases of reclaimed lands were made by the Irrigation and Reclaimed Lands Acts 1908 and 1909.

(iii.) *The Northern Territory.* In 1863 so much of the State of New South Wales as lay to the north of lat. 26° S., and between long. 129° and 138° E., was annexed to South Australia. This portion of the continent is under the administration of a Resident, appointed by the Government of South Australia. The Acts referred to in the preceding paragraph hereof do not apply to the Northern Territory lands, the sale and occupation of which are now regulated by the Northern Territory Crown Lands Act 1890, the Northern Territory Lands Act 1899, and the Northern Territory Tropical Products Act 1904.

5. **Western Australia.**—In the year 1827 Captain James Stirling, accompanied by Mr. Charles Fraser, the Colonial Botanist in New South Wales, made an examination of the country in the vicinity of the Swan River, with a view to the establishment of a settlement, and in consequence of the favourable report made by these gentlemen, the Imperial Government decided to organise a colonising expedition forthwith. On the 2nd June, 1829, the transport *Parmelia* arrived in Cockburn Sound, having on board Captain Stirling, who had been appointed Civil Superintendent of the Swan River settlement, and a number of officials and intending settlers. On the 17th June the expedition disembarked and encamped on the north bank of the Swan River, at the place now called Rous Head, and with the landing of these immigrants the settlement of Western Australia commences.

(i.) *First Grants of Land.* The first settlers were offered large grants of land proportional to the amount of capital introduced, at the rate of forty acres for every sum of £3, and of 200 acres for every labourer brought into the colony, the grants being subject, however, to improvement conditions. Closely following the *Parmelia* a number of vessels arrived, increasing the number of settlers and introducing further supplies of live stock, until at the end of the year 1830 nearly 1800 immigrants had arrived in the colony. No preparations had been made for the reception or provision of these settlers; many of them were persons who were quite unfitted for the hardships which had to be endured, and a general feeling of despondency and depression commenced to spread amongst the colonists. Numbers left, rather than face the difficulties inseparable from initial colonisation; those who remained, however, struggled on manfully, and in spite of great hardships and privations laid the foundations of the present State.

(ii.) *Free Grants Abolished.* The original regulations under which grants were made to the first settlers were amended by others of a similar nature issued by the Imperial Government on the 20th July, 1830, which in turn were replaced in 1832, when free grants were abolished and land was sold at a minimum price of five shillings per acre. In 1837 the price of allotments in Perth, Fremantle, and Albany was fixed at a minimum of £5 an acre. New land regulations were issued by the Colonial Office in 1843, 1864, 1873, 1882, and 1887, when the whole of the regulations were amended and consolidated. The colony was divided into six divisions, in all of which sale by auction was permitted, but otherwise the conditions of occupation differed in each division.

(iii.) *Acts now in Force.* In the year 1890 Constitutional Government was granted to the colony, and from time to time various amendments were made in the land laws,

until the year 1898, when a Land Act was passed amending, repealing, and consolidating previous legislation as to the sale, occupation, and management of Crown lands. This Act has in turn been amended in 1899, 1900, 1902, 1904, 1905, 1906, and 1909, and, with its amendments, is now in force. The principle of repurchasing Crown lands for the purposes of closer settlement was introduced by the Agricultural Lands Purchase Acts 1896 to 1904; these Acts were repealed and consolidated by the Agricultural Lands Purchase Act 1909.

6. **Tasmania.**—The early settlement of Tasmania was carried out under the regulations framed for the disposal of Crown lands in New South Wales, of which colony it was, at the outset, a part, and after its constitution under a separate administration in 1825 the regulations issued from the Colonial Office for the settlement of Crown lands in the mother colony were made applicable to Tasmania. In 1828 the first land sales in the island took place, but so low were the prices obtained that 70,000 acres enriched the Treasury by only £20,000. In the month of January, 1831, the system of issuing free grants of land was abolished.

(i.) *The Waste Lands Acts 1858 to 1870.* In 1855 responsible government was granted to the island colony, and from this time dates the policy under which later settlement has taken place. The Waste Lands Act 1858 introduced the principle of free selection before survey. From 1860 to 1870 no less than thirteen Land Acts were passed, and in the latter year a new measure, the Waste Lands Act 1870, embodying and consolidating many of the salient features of previous enactments, was carried. The Act of 1870 gave power to the Governor to reserve such land as he might deem necessary for public purposes, and the lands not so reserved were divided into (*a*) town, (*b*) agricultural, and (*c*) pastoral lands. The upset price for agricultural lands was £1 an acre, that for pastoral lands being a sum equivalent to twelve years' rental, but not in any case more than five shillings an acre.

(ii.) *Acts now in Force.* Numerous amendments to the Act of 1870 were passed, until, in 1890, a measure was carried, consolidating the various Acts then in force; the Act of 1890 was itself amended from time to time. The law relating to land tenure and settlement is now consolidated in the Crown Lands Acts 1903, 1905, and 1907; and in the Closer Settlement Acts of 1906, 1907, and 1908; a Bill to further amend the Closer Settlement Act was introduced in Parliament in 1910.

7. **Administration and Classification of Crown Lands.**—In each of the States of the Commonwealth there is now a Lands Department under the direction of a responsible Cabinet Minister, who is charged generally with the administration of the Acts relating to the alienation, occupation, and management of Crown lands. The administrative functions of most of the Lands Departments are to some extent decentralised by the division of the States into what are usually termed Land Districts, in each of which there is a Land Office, under the management of a land officer, who deals with applications for selections and other matters generally appertaining to the administration of the Acts within the particular district. In some of the States there is also a Local Land Board or a Commissioner for each district or group of districts.

In most of the States Crown lands are classified according to their situation, the suitability of the soil for particular purposes, and the prevailing climatic and other conditions. The modes of tenure under the Acts, as well as the amount of purchase money or rent and the conditions as to improvements and residence, may vary in each State according to the classification of the land. The administration of certain special Acts relating to Crown lands has in some cases been placed in the hands of a Board, under the general supervision of the Minister; for such purposes, for instance, are constituted the Western Lands Board in New South Wales, the Lands Purchase and Management Board in Victoria, and the Closer Settlement Board in Tasmania.

In each of the States there is also a Mines Department, which is empowered under the several Acts relating to mining to grant leases and licenses of Crown lands for mining

and auxiliary purposes. Such leases and licenses are more particularly referred to in a later part of this section. (See § 9, below.)

Full information respecting lands available for settlement or on any matter connected with the selection of holdings may be obtained from the Commonwealth representative in London, from the Lands Departments, or from the Agents-General of the respective States. The administration and classification of Crown lands in each State was more fully dealt with in Year Book No. 2 (pp. 273-6) to which reference may be made.

§ 3. Tenures under which Crown Lands may be Alienated or Occupied.

1. **Introduction.**—The freehold of Crown lands in the several States of the Commonwealth may now ordinarily be alienated either by free grant (in trust for certain specified purposes), by direct sale and purchase (which may be either by agreement or at auction), or by conditional sale and purchase. Crown lands may be occupied in the several States under a variety of forms of leases and licenses, issued both by the Lands and the Mines Departments.

2. **Classification of Tenures.**— The tabular statement given on pages 246-7 shews the several tenures under which Crown lands may be acquired or occupied in each State of the Commonwealth. The several forms of tenure are dealt with individually in the succeeding parts of this section. In the State of Victoria it is proposed to amend and consolidate the Land Acts at an early date, and to abolish some of the existing forms of tenure. Reference to any amending Acts which are passed up to the latest available date prior to the publication of this book may be found in the Appendix.

(i.) *Free Grants, Reservations, and Dedications.* The modes of alienation given in this category include all free grants either of the fee simple or of leases of Crown lands. "Free" homesteads in Queensland and Western Australia are not included in this class, these tenures being free in the sense that no purchase-money is payable, though the grants are not free from residential and improvement conditions. Reservation and dedication, which are ordinarily conditions precedent to the issue of free grants, are also dealt with herein.

(ii.) *Sales by Auction and Special Sales.* This class of tenure includes all methods by which the freehold of Crown lands may be obtained (exclusive of sales under the Closer Settlement and kindred Acts) for cash or by deferred payments, and in which the only condition for the issue of the grant is the payment of the purchase-money.

(iii.) *Conditional Purchases.* In this class are included all tenures (except tenures under Closer Settlement and kindred Acts) in which the issue of the grant of the fee simple is conditional upon the fulfilment of certain conditions (as to residence or improvements) other than, or in addition to, the condition of the payment of purchase-money.

(iv.) *Leases and Licenses.* This class includes all forms of occupation of Crown lands (other than under Closer Settlement and kindred Acts) for a term of years under leases and licenses issued by the Lands Departments. As the terms indicate, the freehold cannot be obtained under these forms of tenure.

(v.) *Closer Settlement Sales, Leases, and Licenses.* In this division are included all forms of tenure provided for under the various Closer Settlement Acts and also under kindred Acts, such as the Village Settlements and Small Holdings Acts.

(vi.) *Mines Departments' Leases and Licenses.* The tenures here specified include all methods in which Crown lands may be occupied for mining and auxiliary purposes under leases and licenses issued by the Mines Departments in the several States.

3. **Conversion of Tenures.**—It may be seen in later parts of this section that in certain cases provision is made in the Land Acts for the conversion of one form of tenure into another. In this connection an important Act was passed in New South Wales in 1908, viz., the Crown Lands (Amendment) Act 1908.

(i.) *New South Wales.—The Crown Lands Amendment Act 1908.* This Act, which came into force on the 1st February, 1909, contains provisions for the conversion of various forms of tenure.

(*a*) *Conversion of Homestead Selections or Grants.* Under the amending Act any homestead selection or grant (see page 259) may be converted into (*a*) a conditional purchase lease, (*b*) a conditional purchase, or (*c*) a conditional purchase and conditional lease, but so that the area comprised in such lease does not exceed three times the area comprised in the conditional purchase. Any application for conversion must be accompanied by a provisional deposit of one shilling per acre of the area of a proposed conditional purchase, as part payment of a deposit of 5 per cent. on the capital value ; any balance of the latter deposit must be paid within one month after the applicant has been called upon to do so.

(*b*) *Conversion of Settlement Leases.* Any settlement lease (see page 275 may be converted into an original conditional purchase or into an original conditional purchase and a conditional lease if the total area held by an applicant for conversion (exclusive of land under annual tenure) does not exceed an area which, in the opinion of the Board, would be sufficient for the maintenance in average seasons and circumstances of an average family. The area of the lease must not exceed three times the area of the conditional purchase.

If the total area held by an applicant for conversion (exclusive of land under annual tenure) exceeds such area, the conversion must be partly into an original conditional purchase and the balance into a conditional lease.

(*c*) *Conversion of Non-residential Conditional Purchases.* A non-residential conditional purchase (see p. 258) may be converted into an original conditional purchase, the term of ten years' residence commencing from the date of application for conversion, The term of compulsory residence is, however, reducible by any period (not exceeding five years) of continuous residence on the land by the holder up to and immediately preceding his application for conversion.

(*d*) *Conversion of Special Leases and Church and School Lands Leases.* The registered holder of any special lease for the purpose of access to water, agricultural, bee and poultry farming, dairying, dams, drainage, garden, grazing, irrigation, orchard, pig and poultry farm, residence, sugar-cane growing, tanks, tobacco-growing, or water conservation, or of any church or school lands lease, may apply to convert the same or part thereof into (*a*) a conditional purchase lease, (*b*) a conditional purchase, (*c*) a homestead selection, (*d*) a settlement lease, or (*e*) a conditional lease. An application for conversion must be accompanied by the prescribed deposit. The application is referred to the Board for inquiry and the Board reports to the Minister as to whether there is any objection to the granting of the application. If the Board recommends the granting of the application, it proceeds to appraise the capital value or price or rent of the land.

(*e*) *Purchase of Residential Leases.* The holder of any residential lease (see § 7, 2 vi.) may at any time after the first five years of his lease apply to purchase his holding. The application must be accompanied by the prescribed deposit, and is referred to the Secretary for Mines, who, if he concurs therein, reports to the Board, which in turn reports to the Minister. The purchase price is fixed by the Board and must be paid within three months, or within such extended time as the Minister may allow, subject to the payment of interest at 5 per cent.

(*f*) *Limitation of Transfer.* Conditional purchase leases, conditional purchases, homestead selections, and settlement leases, and subdivisions of the same may not be transferred, except by way of mortgage, to a person who already holds under any tenure (other than annual tenure) an area greater than a "home maintenance area."

CLASSIFICATION OF TENURES UNDER WHICH CROWN LANDS MAY BE ALIENATED OR OCCUPIED.

New South Wales.[1]	Victoria.	Queensland.
FREE GRANTS, RESERVATIONS, AND DEDICATIONS.		
Free grants in trust Volunteer land grants Reservations and dedications under Land Act 1884 and Mining Act 1906	Free grants in trust and reservations under Land Act 1901	Free grants in trust Reservations under Land Act 1897 and under State Forests and National Parks Act 1906
SALES BY AUCTION AND SPECIAL SALES.		
Auction sales for cash or on credit After-auction sales Special sales Improvement purchases	Auction sales for cash or on credit Special sales	Auction sales for cash or on credit After-auction sales Special sales Unconditional selections
CONDITIONAL PURCHASES.		
Residential or non-residential conditional purchases Conversion of conditional purchase leases Homestead selections	Agricultural allotments, residential or non-residential Grazing allotments, residential or non-residential Selection from grazing area, perpetual or auriferous leases Selection from pastoral leases Mallee agricultural licenses Murray settlements leases	Agricultural farms Agricultural homesteads Prickly Pear selections Free homesteads
LEASES AND LICENSES.		
Conditional leases Conditional purchase leases Settlement leases Improvement leases Annual leases Residential leases Special leases Snow leases Pastoral leases Scrub leases Inferior lands leases Occupation licenses Western lands leases	Grazing area leases Perpetual leases Mallee leases Licenses of auriferous lands Leases of swamp or reclaimed lands Grazing licenses Leases and licenses for other than pastoral or agricultural purposes State forest and timber reserve licenses	Grazing farms Grazing homesteads Scrub selections Occupation licenses Special leases Perpetual lease selections Special licenses Pastoral leases
CLOSER SETTLEMENT SALES, LEASES AND LICENSES.		
Sales by auction Closer settlement purchase Annual leases Labour settlements	Special sales Sales by auction Conditional purchase leases Holdings under small Improved Holdings Act 1906 Village communities	Sales by auction Agricultural farms Unconditional selections Settlements under Special Agricultural Selections Act 1901
MINES DEPARTMENTS, LEASES AND LICENSES.		
Miners' rights Business licenses Authorities to prospect Leases	Mining leases Special licenses Miners' rights Business & residence licenses	Miners' rights Mining leases and licenses Miners' homestead leases

1. See paragraph 4 (p. 248).

CLASSIFICATION OF TENURES UNDER WHICH CROWN LANDS MAY BE ALIENATED OR OCCUPIED.

South Australia.	Western Australia.	Tasmania.
FREE GRANTS, RESERVATIONS, AND DEDICATIONS.		
Free grants in trust Reservations and dedications under Crown Lands Act 1903 Artesian leases	Free grants in trust and free leases Reservations under Land Acts 1898 and 1906	Free leases Reservations under Crown Lands Act 1903
SALES BY AUCTION AND SPECIAL SALES.		
Auction sales for cash After-auction sales Sales for special purposes	Auction sales for cash	Auction sales for cash or on credit After-auction sales Special sales of residence or business allotments
CONDITIONAL PURCHASES.		
Agreements to purchase Special agreements under Pinnaroo Railway Act	Conditional purchase, residential or non-residential Conditional purchase by direct payment Conditional purchase of small blocks Free homestead farms Conditional auction sales	Selection of rural lands Homestead areas Selection in mining areas Conditional auction sales
LEASES AND LICENSES.		
Perpetual leases Miscellaneous leases Grazing and cultivation leases Reclaimed swamp leases Special licenses Pastoral leases Leases with right of purchase Northern Territory agricultural, pastoral, right of purchase, perpetual, tropical products, and horse-breeding leases. Northern Territory licenses.	Pastoral leases Timber licenses Special leases Quarrying licenses	Grazing leases Miscellaneous leases Timber licenses Occupation licenses
CLOSER SETTLEMENT SALES, LEASES, AND LICENSES.		
Sales by auction Agreements to purchase Miscellaneous leases Irrigation area leases Village settlements Homestead blocks	Sales by auction Conditional purchases Workingmen's blocks	Special sales Leases with right of purchase
MINES DEPARTMENTS' LEASES AND LICENSES.		
Miners' rights Mining leases Miscellaneous leases Business claims Occupation licenses	Miners' rights Mining leases Miners' homestead leases	Prospectors' licenses Miners' rights Mining leases Miscellaneous licenses

4. **Limitation of Tenures in New South Wales.**—In October, 1910, it was officially stated that it was the policy of the Government to discontinue the granting of the freehold of Crown lands. Pending the necessary alteration of the law to give effect to that policy, settlement will continue under the provisions of the Crown Lands Acts. In cases where lands are to be classified and where the method of disposal is within the discretion of the Minister for Lands, disposal by way of homestead selection and settlement lease has been adopted for the present.

5. **Tenure of Lands by Aliens.**—In the States of New South Wales, Queensland, South Australia, and Tasmania restrictions are imposed upon the tenure of lands by aliens (*i.e.*, persons other than natural-born or naturalised British subjects). In Victoria and Western Australia there are no such restrictions.

(i.) *New South Wales.* Under the Crown Lands Act 1895 (sections 40 and 41), an alien is not qualified to apply for a homestead selection, conditional purchase lease, settlement lease, original homestead lease, or original conditional purchase, unless he has resided in New South Wales for one year, and at the time of making application he lodge a declaration of his intention to become naturalised within five years. If he fail to become naturalised within that period the land is forfeited.

It is proposed to pass a regulation at an early date giving priority to applicants in ballots for land in the following order :—(*a*) Members of any of the European races. (*b*) Persons who are not members of any European race. (*c*) Coloured people who are aliens.

(ii.) *Victoria.* Under the Aliens Act 1890 (section 3), every alien friend resident in Victoria may acquire, either by grant from the Crown or otherwise, both real and personal property.

(iii.) *Queensland.* Under the Land Act 1897 (sections 85.2 and 86B), an alien cannot acquire the freehold of any land in Queensland unless he obtains a certificate that he is able to read and write from dictation words in such language as the Minister for Lands may direct. He must within three years of such acquisition become a naturalised subject. In the Land Bill recently introduced in Parliament these provisions are proposed to be re-enacted, save that the time within which an alien must be naturalised is extended to five years.

(iv.) *South Australia and the Northern Territory.* In South Australia Asiatics are disqualified from holding perpetual leases of lands in irrigation areas under Section 18 of the Irrigation and Reclaimed Lands Act 1908.

In the Northern Territory, under Section 102 of the Northern Territory Crown Lands Act 1890, an Asiatic alien cannot acquire the fee simple of any land. Under the Northern Territory Act 1903, the granting of mining leases to Asiatic aliens is prohibited, and the same Act limits the granting of rights to Asiatic aliens to mine in other than particular localities.

(v.) *Western Australia.* In this State aliens are under no disability as regards the acquisition of the freehold of lands already alienated. Every application to acquire Crown lands, whether by a British subject or an alien, is subject to the approval of the Minister for Lands, with an appeal to the Governor-in-Council.

(vi.) *Tasmania.* Under the Aliens Act 1861 (section 2), aliens cannot hold real estate. An alien, if the subject of a friendly State, may, however, occupy lands for any term not exceeding twenty-one years.

§ 4. Free Grants, Reservations, and Dedications.

1. **Introduction.**—Although free grants of Crown lands were virtually abolished as far back as 1831 (see § 1, 4, above), the Land Acts of all the States now contain provisions under which the free alienation or occupation of Crown lands for certain specified purposes—comprising generally charitable, educational, and public purposes—is allowed. In all the States, also, Crown lands may be excepted from sale and reserved to the Crown or dedicated for various public and special purposes. Generally reservation and dedication are conditions precedent to the issue of a free grant. In addition to reservations of a permanent nature, temporary reservations are also made, but these are, as a rule, subject to considerable fluctuations in area by reason of withdrawals, renotifications, and fresh reservations.

The following table shews the area for which free grants were issued and the areas permanently reserved or dedicated in each State during each year from 1901 to 1909 inclusive:—

PARTICULARS OF FREE GRANTS, RESERVATIONS, AND DEDICATIONS, 1901 to 1909.

Year.	N.S.W.	Victoria.§	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
			FREE GRANTS.				
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901 ...	282	7	425	5	156	10‡	885
1902 ...	92	97	3,709	92	1,918	159‡	6,067
1903 ...	137	2,153	447	17	519	222‡	3,495
1904 ...	633	...	223	13	4,426	570‡	5,865
1905 ...	537	126	2,212	87	15	35‡	3,012
1906 ...	171	4,622	3,095	7	147	80‡	8,122
1907 ...	305	861	943	200	132	6,715‡	9,156
1908 ...	1,575	89	463	38	265	110‡	2,540
1909 ...	1,334	165	281	28	299	270‡	2,377
			RESERVATIONS AND DEDICATIONS.				
1901 ...	1,595	19,278	811,200	*	189,856	4,231	1,026,160†
1902 ...	1,784	81,145	1,456,358	*	209,883	2,611	1,751,781†
1903 ...	463	17,718	3,675,840	*	143,678	1,096	3,838,795†
1904 ...	3,206	9,026	257,195	*	177,779	763	447,969†
1905 ...	1,471	78,525	373,858	*	1,756,073	974	2,210,901†
1906 ...	632	6,711	438,895	*	1,905,504	129	2,351,871†
1907 ...	1,509	1,770	487,766	47,831	406,116	8,113	953,105
1908 ...	1,425	65,883	1,371,259	13,117	664,634	1,302	2,117,620
1909 ...	1,967	34,504	498.515	270,523	394,266	997,213	2,196,988

§ Including both permanent and temporary reservations and dedications. ‡ Free leases.
* Not available. † Exclusive of South Australia.

2. **New South Wales.**—Under Sections 104 to 106 of the Crown Lands Act 1884 Crown lands may be reserved or dedicated for certain charitable, educational, and public purposes therein specified, and at any time thereafter the fee simple of such lands may be alienated in trust for the purpose specified. The Crown Lands Alienation Act 1861, which was repealed by the Act of 1884, contained provisions for the dedicating and granting in trust of Crown lands for religious purposes. In cases where a dedication or a promise of dedication had been made under the authority of the repealed Act, but had not been carried into effect before such repeal, the grant is made by virtue of the saving clause contained in Section 2 of the Act of 1884. No fresh promises of dedication for religious purposes were made after the 11th May, 1880, on which date a resolution against any further such grants was passed by the Legislative Assembly. Holders of certificates issued to such volunteers as had served efficiently for a certain period under the provisions of the Volunteer Force Regulation Act 1867 are entitled to a free grant of 50 acres of such land as may be open to conditional purchase, other than lands within a proclaimed special area; during the year 1908-9 three such grants were made.

(i.) *Reservations.* In addition to the reservations under Sections 104 to 106 of the Act of 1884, referred to above, Crown lands may also be temporarily reserved as sites for cities, towns, or villages under Section 101 of the same Act, and may be reserved for mining purposes under Section 106 of the Mining Act 1906. Crown lands within one mile of any made or projected railway may be temporarily reserved from sale under Section 103 of the Crown Lands Act 1884, and under Sections 112 to 114 of that Act any Crown lands may be reserved from sale for the preservation and growth of timber. Further, under Section 39 of the Crown Lands Act 1889, Crown lands may be reserved by notification in the *Gazette* from being sold or let upon lease or license, in such particular manner as may be specified, or may be reserved from sale or lease generally.

(ii.) *Areas Granted and Reserved 1909-10.* During the financial year 1909-10 the total area for which free grants were prepared was 2039 acres, including grants of 1474 acres of leased land resumed under the 12th clause of the Public Roads Act 1902. During the same period 437 acres were dedicated and permanently reserved, the number of separate dedications being 86.

On the 30th June, 1910, the total area temporarily reserved was 26,437,251 acres, of which 6,289,682 acres were for travelling stock, 6,550,499 acres for forest reserves, 2,998,615 acres for water, 1,866,894 acres for mining, and the remainder for temporary commons, railways, recreation and parks, and miscellaneous purposes.

3. **Victoria.**—Under Section 10 of the Land Act 1901 the Governor is authorised to reserve Crown lands, either temporarily or permanently, from sale, lease, or license for any public purpose whatsoever. In case of temporary reservations the land cannot be sold or leased, nor a license be granted until the temporary reservation has been revoked, and in case of permanent reservation all conveyances and alienations except for the purpose for which the reservation is made are void both against the Crown and against all other persons.

During the year 1909 eleven free grants, comprising an area of 165 acres, were issued. During the same year reservations of both a permanent and temporary nature, comprising an area of 34,504 acres, were made; of this area 28,037 acres were reserved for recreation grounds, including National Parks, and 1370 acres for the growth and preservation of timber (excluding reserves under the Forests Act 1907).

4. **Queensland.**—Under Section 190 of the Land Act 1897 the Governor in Council may grant in trust or may reserve from sale or lease, either temporarily or permanently, any Crown lands required for any of the various charitable, educational, and public purposes specified therein, and may, by proclamation and without issuing any deed of grant, place any lands so reserved under the control of trustees.

(i.) *Reservations.* Under Section 19 of the same Act the Governor in Council may set apart any Crown lands as reserves for public purposes, and under Section 2 of the State Forests and National Parks Act 1906 he may permanently reserve any Crown lands and declare them to be a State Forest or a National Park.

(ii.) *Areas Granted and Reserved 1909.* During the year 1909 there were forty-five free grants for a total area of 281 acres issued. During the same period reserves covering an area of 498,515 acres were proclaimed, of which 196,142 acres were for timber reserves, 98,709 acres were for reserves for aborigines, 31,436 acres for camping and water, and 21,677 acres for water supply. The total area reserved up to the end of the year 1909 was 13,318,885 acres.

5. **South Australia.**—Under Section 7 (*d*) of the Crown Lands Act 1903 the Governor is empowered to dedicate by proclamation any Crown lands for various charitable, educational, and public purposes, and may, at any time after dedication, grant the fee simple of such lands to secure the use thereof for the purpose for which they were dedicated.

(i.) *Reservations.* Under Section 7 (*f*) of the same Act the Governor may by proclamation reserve any Crown lands (*a*) for the use of aborigines, (*b*) for the purposes of military defence, (*c*) for forest or travelling-stock reserves, (*d*) for public recreation grounds, (*e*) for railways or tramways, and (*f*) for park lands.

(ii.) *Artesian Leases.* Under special circumstances free leases of pastoral lands may be granted to discoverers of artesian wells. (See § 8. 5 vi. c.)

(iii.) *Areas Granted and Reserved, 1909.* During the year 1909 there were 17 free grants issued for a total area of 28 acres. During the same year 111 reserves, comprising 270,523 acres, were proclaimed; of this area 256,000 acres were rereserved as a commonage reserve at the Tanami Rockholes, Northern Territory.

6. **Western Australia.**—Under Section 39 of the Land Act 1898, as amended by Section 27 of the Act of 1906, the Governor is authorised to except from sale, and to reserve to the Crown or to dispose of in such other manner as may seem best for the public interest, any Crown lands which may be required for the various religious, charitable, and public purposes specified. These reservations may be either temporary or permanent, but if temporary the reservation lapses unless confirmed within twelve months. Any reserve may either be alienated in trust for the purpose specified, the trustees having power of leasing for any term not exceeding twenty-one years, or may be leased for a term of 999 years. The Governor is further authorised, without issuing any deed of grant, to place any reserve under the control of any person or body of persons, as a board of management.

During the year 1909, 15 free grants for 299 acres were issued, while the area reserved was 394,266 acres. Further particulars are not available.

7. **Tasmania.**—There are no free grants of the fee simple of Crown lands in this State. Under Section 24 of the Crown Lands Act 1903, however, the Governor may by proclamation reserve any Crown lands for the purposes therein specified, and may thereafter, in order to give effect to any such proclamation, vest for such term as he thinks fit any lands so reserved in any person or body of persons. Under this section lands are reserved from sale and are ordinarily leased to the trustees of public bodies for a period of ninety-nine years at a peppercorn rental. These leases contain provisions that the lands shall be appropriated only to the purposes for which they were reserved. Upon breach of such provisions the lands are forfeited to the Crown.

During the year 1909 there were twenty-one free leases, comprising an area of 270 acres, issued. During the same period 997,213 acres were reserved, 996,791 acres being reserved for re-afforestation purposes, 150 acres for recreation grounds, and 146 acres for scenery reserves. The total area permanently reserved to the end of the year 1909 was 1,016,757 acres.

§ 5. Sales by Auction and Special Sales.

1. **Introduction.**—In all the States sales by auction of Crown lands are held from time to time. Notifications of such sales are given in the Government *Gazettes*, together with particulars as to the upset price and conditions of sale. Excepting in the case of South Australia, where land is sold at auction for cash only, the purchase may be either for cash or on credit by deferred payments. In most of the States land may also be purchased by private contract at the upset price, when it has been offered at auction and not sold. In the case of auction sales on credit in the States of Western Australia and Tasmania, certain improvement conditions are imposed, and such sales are therefore classed for the purposes of this article among *Conditional Purchases.* (See § 6 below.) In most of the States comparatively small areas of Crown lands may be sold without competition under special circumstances. Sales by auction and special sales under Closer Settlement Acts are referred to in a later part of this section. (See § 8.)

2. **New South Wales.**—Under the Crown Lands Act 1884 lands not exceeding in the aggregate 200,000 acres for the whole State may be sold by auction during any one year. The sales are notified in the *Gazette* not less than one month before the day of sale. The upset prices may not be less than £8 an acre for town lands; £2 10s. for suburban lands; and other lands fifteen shillings. Town lands may not be sold in areas exceeding half-an-acre; suburban lands in areas exceeding twenty acres; and country lands in areas exceeding 640 acres. A deposit of 25 per cent. on the purchase money must be paid at the sale, and the remainder within three months.

(i.) *Deferred Payment on Auction Sales.* Under the Auction Sales Balances Act 1887 and the Crown Lands Amendment Act 1903 special terms of payment may be made on auction sales of land subdivided into areas not exceeding forty acres. The time for deferred payments may not exceed five years and the instalments carry interest at five per cent. per annum. A cash deposit of 25 per cent. on the purchase money must be paid.

(ii.) *After-auction Sales.* Under the Crown Lands Amendments Acts 1895 and 1903 lands which have been offered for sale at auction and not sold may be granted at the upset price to any person applying. A deposit of 25 per cent. on the upset price must be paid, and the remainder according to the terms on which the land was offered at auction.

(iii.) *Special Sales without Competition.* Under the Crown Lands Act 1884 the Governor is authorised to rescind the reservation of water frontage, or of land adjoining such frontage, contained in any Crown grant, and to sell the land, the subject of such rescission, at a fair price not less than the upset price, to the owner of the land contained in the grant. Crown lands may be sold to the owners of adjacent lands in a similar manner in the following cases:—(*a*) Where there is no way of access attainable, (*b*) where the lands comprised are insufficient in area for conditional sale, (*c*) where the lands are situated between granted land and a road which should form the way of approach to such granted land, (*d*) where the lands are encroached upon by buildings erected on granted land, and (*e*) where lands have been reclaimed with the authority of the Governor from below high-water mark.

(iv.) *Improvement Purchases.* Although termed an "improvement" purchase, this type of sale is not conditional on the subsequent fulfilment of any improvement conditions. Only lands within proclaimed goldfields are available for improvement purchase. The areas which may be acquired in this manner may not exceed one-quarter of an acre within the boundaries of a town or village defined as such in the Mining Act, or two acres of land outside such boundaries. The price of the land is fixed by the local Board, and must not be less than at the rate of £8 per acre for town lands, and £2 10s. for suburban or other lands, or for any area less than one acre. The applicant must be in authorised occupation under the Mining Act of the land he applies for, and must be the owner of the improvements thereon in virtue of which his application is made, and such improvements must be of value equal to the respective minimum rates above-mentioned, *i.e*, £8 an acre for town lands, and £2 10s. an acre for suburban or other lands, or for an area less than one acre. No person who has made an improvement purchase may make a subsequent purchase of the same kind within three miles of a prior purchase by him.

(v.) *Alienation by Auction and Special Sales.* During the year ended the 30th June, 1910, the area of Crown lands sold by auction and special sales for which grants were prepared amounted to 14,915 acres, of which 10,202 acres were sold by auction in 1331 lots; 2907 were sold by after-auction sales in 953 lots; 45 acres were sold as improvement purchases in 134 lots; and 1761 acres were sold as special purchases in 185 lots. The following table gives particulars of Crown lands alienated by auction and special sales during each year from 1901 to 1909:—

NEW SOUTH WALES.—AUCTION AND SPECIAL SALES, 1901 to 1909.

Year.	Auction and After-auction Sales.	Improvement Purchases.	Special Sales.	Total.	
				Area.	Price.
	Acres.	Acres.	Acres.	Acres.	£
1901	49,074	43	445	49,562	116,562
1902	50,110	801	1,022	51,933	115,625
1903	40,610	23	576	41,209	117,879
1904	53,556	23	1,185	54,764	120,946
1905[1] ...	22,390[3]	6	129	22,525	99,246
1906[2] ...	22,774[3]	36	2,616	25,426	86,802
1907[2] ...	25,327[3]	57	1,131	26,515	132,127
1908[2] ...	13,995[3]	34	712	14,741	94,928
1909[2] ...	11,745[3]	48	1,229	13,022	98,763

1. Half-year ended 30th June. 2. Year ended 30th June. 3. Including land sold under the Centenary Park Sale Act.

The total areas alienated by auction and other forms of sale up to the 30th June, 1910, are shewn below. (See § 11.)

3. **Victoria.**—Lands specially classed for sale by auction, and any land in any city, town, or borough, may be sold by auction in fee simple, not exceeding 100,000 acres in any one year, at an upset price of £1 an acre, or at any higher price determined. Before any country lands can be sold a schedule thereof must be laid before both Houses of Parliament. The purchaser must pay the survey charge at the time of the sale, together with a deposit of 12½ per cent. of the whole price; the residue is payable in equal half-yearly instalments not exceeding forty in number, according to the amount, with interest at the rate of 4 per cent. per annum, or may be paid at any earlier time at the option of the purchaser. On failure of the payment of any instalment with interest, the deposit and any instalments already paid are liable to forfeiture, and the contract becomes void. Isolated portions of Crown lands not exceeding fifty acres, or any portion not exceeding three acres required as a site for a church or for any charitable purpose, for which land cannot legally be reserved, may also be sold by auction. There are stringent provisions and penalties against illegal agreements to prevent fair competition at auction sales.

(i.) *Special Sales without Competition.* Detached strips of land not exceeding twenty acres may be sold at a valuation to the owner of the adjoining freehold in cases somewhat similar to those specified above in respect to Crown lands in New South Wales.

(ii.) *Areas Sold at Auction and by Special Sales, 1901 to 1909.* The following table gives particulars of auction sales and special sales for the year 1901 and from 1905 to 1909:—

VICTORIA.—AUCTION AND SPECIAL SALES, 1901 to 1909.

Particulars.	1901.	1905.	1906.	1907.	1908.	1909.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Country lands	4,079	3,267	2,060	2,776	2,805	2,729
Town and suburban lands	2,127	2,129	1,946	1,369	1,630	2,062
Special sales	846	3,382	2,636	2,168	2,117	2,602
Total	7,052	8,778	6,642	6,313	6,552	7,393

Particulars of total areas alienated are given below. (See § 11.)

4. **Queensland.**—The Governor may proclaim any Crown lands to be sold by auction. Town or suburban lots must be offered as nearly as possible according to the following scale:—Town lands in allotments of from one rood to one acre, at an upset price of £8 per acre; suburban lands, if within one mile from town lands, in lots of from one to five acres, and if over one mile from town lands, in lots of from one to ten acres, the upset price being £2 per acre. In respect of country lands, the maximum area which may be sold by auction in any one year is 500,000 acres, and the upset price is fixed at £1 an acre for lands classed as agricultural, and not less than ten shillings per acre in the case of other lands. The area of any portion of country lands so sold may not exceed 5120 acres. In sales by auction both of country and of town lands, a deposit, as specified in the proclamation, must be paid at the time of sale, and the balance, including the value of improvements on the land, together with assurance and survey fees, must be paid within one month from the date of sale.

(i.) *Deferred Payment on Auction Sales.* The Governor may, by the proclamation under which the sale is notified, vary the conditions as to the amount of the deposit and the times for payment of the balance. The time for payment may not, however, be extended beyond ten years. If the time for payment is extended beyond six months, all instalments payable at a later date bear interest at 5 per cent. per annum.

(ii.) *After-auction Sales.* The proclamation of lands for sale by auction declares that any lands therein mentioned, which have been offered at auction, but not sold or withdrawn, shall be open to purchase at the upset price by the first applicant. The price may be paid in the same instalments and at the same periods as if the land had been bought at the auction.

(iii.) *Special Sales without Competition.* Land may be sold without competition to the holder or holders of adjoining lands at a price to be determined by the Land Court, under circumstances similar to those specified above in the case of New South Wales. When the holder of any land proves that, owing to danger from floods or other reasons, it is unsafe to reside on his holding, he may be granted, on payment of a price determined by the Land Court, an area not exceeding ten acres out of the nearest convenient and available Crown lands.

(iv.) *Areas Sold at Auction, after Auction, and by Special Sales, 1901 to 1909.* The following table shews the areas sold at or after auction, and by special sales, during the year 1901 and from 1905 to 1909:—

QUEENSLAND.—AUCTION AND SPECIAL SALES, 1901 to 1909.

Particulars.	1901.	1905.	1906.	1907.	1908.	1909.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Town	334	128	340	285	472	227
Suburban	793	363	706	364	621	340
Country—						
Ordinary sales	52,132	157,839	15,481	11,556	7,585	12,844
Special sales	...	1,659	...	3,716	...	...
Total	53,259	159,989	16,527	15,921	8,678	13,411

Particulars as to the total areas alienated by all forms of purchase up to the end of each year from 1901 to 1909 are given in a later part of this section. (See § 11 below.)

(v.) *Unconditional Selections.* Although termed a "selection," this form of tenure partakes rather of the nature of a sale by auction with deferred payment than of a conditional purchase. Areas of land are available for unconditional selection at a price ranging from thirteen shillings and fourpence upwards, which is payable in twenty

annual instalments. The maximum area which can be acquired by any one person as an unconditional selection in any one district is 1280 acres. As the term implies, no other condition than the payment of the purchase-money is attached to this mode of selection; a negotiable lease for the term of twenty years is issued to the selector when his application to select has been approved of by the Court, and a deed of grant may be obtained at any time on payment of the balance of the purchasing price. An agricultural farm, or an agricultural homestead, may be converted into an unconditional selection, and an unconditional selection may be converted into an agricultural farm.

The following table shews the number and area of unconditional selections for which applications were accepted during the year 1901 and from 1905 to 1909:—

QUEENSLAND.—UNCONDITIONAL SELECTION, 1901 to 1909.

Particulars.	1901.	1905.	1906.	1907.	1908.	1909.
Number	151	90	130	91	126	131
Area ... ... Acres	24,322	10,586	25,262	25,382	22,770	27,395
Rent .... £	1,180	481	1,113	1,042	1,073	1,111

5. **South Australia.**—The following lands may be sold by auction for cash:—(*a*) Special blocks. Any single section of Crown lands which may be surrounded by lands sold or contracted to be sold, and any section or block of land (not exceeding 100 acres in area) which may be required for the establishment of any industry, trade, or business. (*b*) Crown lands which have been offered for perpetual lease, and not taken up for two years. (*c*) Town lands. (*d*) Suburban lands, which the Governor by proclamation may except from being dealt with by the Board. The upset price of any land offered at auction is determined by the Commissioner, and 20 per cent. of the purchase-money must be deposited at the time of sale, and the residue must be paid within one month or within such extended time as the Commissioner may allow. Purchase-moneys derived from the sale of lands by auction are paid into a fund primarily applicable to the payment of such portion of the public liabilities as shall be specially charged thereon.

(i.) *After-auction Sales.* All Crown lands, except town or suburban lands, offered at auction and not sold remain open for leasing or sale under agreement or may be sold by private contract for cash at the upset price.

(ii.) *Sales for Special Purposes.* Under section 201 of the Crown Lands Act 1903 the Governor may, on the application of the purchaser or lessee under any of the Crown Lands Acts, grant any of the land comprised in such agreement or lease to a corporation or to trustees, to be used for any public or charitable purposes, not exceeding two acres, for any one purpose, or he may, on the application of the holder of a lease or agreement, grant not over one acre of land, comprised in such lease or agreement, as a site for a blacksmith's or carpenter's shop, mill, store, or post office, provided that the land is not situated within five miles of any town lands. The purchase-money for such land must be paid at the time of application.

(iii.) *Northern Territory, Auction Sales.* Town and suburban lands may be offered for sale by auction at an upset price of not less than £1 an acre, and country lands at an upset price of not less than ten shillings an acre; 20 per cent. of the amount of the purchase-money must be paid at the time of sale, and the balance within one month. Town and suburban lands may also be sold by private contract.

(iv.) *Areas Sold for Cash, 1901 to 1909.* The following table shews the areas sold for cash during the year 1901 and from 1905 to 1909. The total areas sold under all types

of sale at the end of the year 1901 and from 1905 to 1909 are shewn in a later part of this section. (See § 11.)

SOUTH AUSTRALIA.—AUCTION AND SPECIAL SALES, 1901 to 1909.

Year	1901.	1905.	1906.	1907.	1908.	1909.
Area in acres	11,314	77,022	69,060	70,349	78,557	128,529

6. **Western Australia.**—Town and suburban lands throughout the colony, after being surveyed into lots and notified in the *Gazette* as open for sale, may be sold by public auction at an upset price to be determined by the Governor in Council. Any person may apply to the Minister to put up for sale by auction any lot already surveyed on depositing 10 per cent. of the upset price, which is refunded in the event of the applicant being outbid at auction. The purchaser must pay 10 per cent. on the fall of the hammer, unless he has already paid a sufficient deposit on application, and must ordinarily pay the balance of the purchase-money, and the value of the improvements, if any, by four equal quarterly instalments. In the case of suburban lands, the purchaser must carry out certain improvements, which are more particularly referred to below. (See § 6. *Conditional Purchases*, 6, vii.). On payment of the first instalment of the purchase-money a license is issued to the purchaser, and his license may be transferred or mortgaged.

(i.) *Areas Sold by Auction, 1901 to 1909.* The following table shews the areas of town and suburban lands sold at auction during the year 1901 and from 1905 to 1909 :—

WESTERN AUSTRALIA.—AUCTION SALES, 1901 to 1909.

Year	1901.	1905.	1906.	1907.	1908.	1909.
Area sold ... ... Acres	856	1,076	1,109	1,895	2,258	2,160
Number of Allotments ...	1,366	950	935	995	1,090	879

Particulars as to total areas alienated are given in a later part of this section. (See § 11 below.)

7. **Tasmania.**—Any town lands may be sold at auction or by private contract, either for cash or on credit, provided that no such lands may be sold on credit if the price is less than £15. Rural lands may also be sold at auction or by private contract, but lots of first-class land may not be sold on credit if less than fifteen acres in area. In the case of sales on credit both of town and rural lands, improvement conditions are imposed, and such sales are therefore classified for the purposes of this article as *Conditional Purchases*. (See § 6.) The area of any rural lot sold may not exceed: (*a*) 200 acres (nor be less than fifteen acres, if sold by private contract) of first-class land ; (*b*) 250 acres, nor be less than thirty acres of second-class land ; and (*c*) 500 acres, nor be less than 60 acres of third-class land.

(i.) *After-auction Sales.* All rural lands and town lands, not within five miles of any city, which have been offered at auction and not sold, may be purchased by private contract at the upset price, and subject to the conditions on which they were offered at auction.

(ii.) *Sale of Land in Mining Towns.* The surface of any Crown land within a mining town occupied as a residence area or a business area (see § 7, below) may be sold

at auction. The holder of a residence or business license, who is in occupation and is the owner of buildings and improvements upon the area licensed of a value equal to the upset price of such area, is entitled to purchase the area at the upset price, which may not be less than £10, exclusive of improvements. The area so purchased may not in any case exceed half an acre. The areas may be sold on credit, one-third of the price being added as premium. The purchaser must pay a deposit of one-fourteenth of the price at the time of sale, and the remainder by thirteen annual instalments.

(iii.) *Areas Sold for Cash, 1901 to 1909.* The following table shews the areas sold for cash during the year 1901 and from 1905 to 1909:—

TASMANIA.—AUCTION AND SPECIAL SALES, 1901 to 1909.

Year	1901.	1905.	1906.	1907.	1908.	1909.
Area in acres	1,915	404	463	504	603	1,026

Particulars of total areas alienated are given in a later part of this section. (See § 11.)

§ 6. Conditional Purchases.

1. **Introduction.**—In all the States of the Commonwealth the freehold of the land may be acquired under what are known as systems of conditional purchase by deferred payments of half-yearly or yearly instalments. Certain conditions, generally as to residence and improvements, have to be complied with before the freehold is granted, but these conditions are usually of a light nature and are inserted chiefly with the object of guaranteeing that the occupier will become of benefit to the community by making a reasonable effort to render his holding wealth-producing. Though there is a considerable similarity between some of the forms of tenure in the several States, the terms and conditions vary greatly in detail. As a rule a lease or license for a certain period is first issued to the selector, and upon fulfilment of the prescribed conditions and payment of the full amount of purchase-money the freehold is conveyed to him. In Queensland and Western Australia "free" homesteads may be acquired. Although under these tenures no purchase-money is payable, the grant is conditional on the performance of residential and improvement conditions; these tenures are therefore included here with conditional purchases rather than with free grants.

2. **New South Wales.**—The following are the methods by which land may be alienated by conditional purchase:—(i.) Residential conditional purchase; (ii.) non-residential conditional purchase; (iii.) conversion of conditional purchase; and (iv.) homestead selections.

(i.) *Residential Conditional Purchase.* Any vacant Crown lands in the "Eastern Division" and "Central Division" are available for conditional purchase, but only those set apart by proclamation as special areas are open in the "Western Division." For a holding of this class an applicant must be not less than sixteen years of age, and must pay on application both the prescribed deposit and a survey fee according to a fixed scale. The area which may be selected depends upon the division in which the land is situated. In the Eastern Division the minimum and maximum areas are respectively 40 and 640

acres ; in the Central 40 and 2560 acres ; and in a special area the maximum is 320 acres in the Eastern and 640 acres in the Central or Western Divisions. The deposit is 10 per cent. of the price of the land, which is ordinarily available at the statutory value of £1 an acre, subject to the applicant's right to apply for an appraisement where he considers such price excessive. At the end of the third year from the date of application the purchaser may pay an instalment of 5 per cent. on the price of the land. This instalment includes interest at the rate of 2½ per cent. on the outstanding balance of the purchase-money due to the Crown, and he must continue to pay a similar instalment annually until such balance and interest have been paid off.

The following conditions are attached to the holding, viz.:—That it must be fenced within three years, or be improved to the value of six shillings an acre (but not exceeding £384) within the same period, and to the value of ten shillings an acre (but not exceeding £640) at the end of the first five years. The settler must commence to reside on his holding within three months from the date of the confirmation of his application by the Land Board, and continue to do so for a period of ten years from the date of application, but for sufficient reason this condition may be suspended. Members of a family taking up land situated within working distance of each other, may fulfil the condition of residence in respect of their holdings by living on any one of them. The conditional purchase may be transferred after the issue of the first certificate of fulfilment of conditions. This certificate will be issued at the expiration of five years from the date of application if the required conditions have been fulfilled up to that date, and if the holding be transferred the transferee must reside thereon during the remainder of the unexpired residence term of ten years.

The holder of a conditional purchase may at any time, if land be available, apply for an additional conditional purchase (of unclassified land) the area of which, together with that of the original holding, may not exceed the maximum limits stated above. The Crown Lands Act of 1903, however, provides that the areas specified may be exceeded by allowing an applicant to acquire additional holdings of classified land, the area of which, together with that of all other lands held by the applicant other than under annual tenure, must not exceed such an area as, in the opinion of the Land Board, is sufficient for the maintenance of his home thereon in average seasons and circumstances. The additional holdings need not be contiguous to the original holding, but must be within reasonable working distance thereof.

(ii.) *Non-residential Conditional Purchase.* When land is conditionally purchased without residence the maximum area obtainable is 320 acres, and the minimum 40 acres. The price, deposit, and annual instalments are double those required under residential conditions. The selection must be enclosed with a fence within twelve months from the date of confirmation of application, and within five years improvements, other than boundary fencing, must be made to the value of £1 an acre, or, with the permission of the Local Board, other improvements to the value of thirty shillings an acre may be substituted for fencing. No person under twenty-one years of age may select land on non-residential terms, and anyone who has made a non-residential conditional purchase is not allowed to make any other conditional purchase. Under the Crown Lands (Amendment) Act 1908 non-residential conditional purchases may be converted into original conditional purchases (see p. 245 *ante*).

(iii.) *Conversion of Conditional Purchase Leases.* Under the Crown Lands Amendment Act 1905, a conditional purchase lease, for which the term is forty years, carries with it a right of conversion into a conditional purchase at any time during its currency, and ultimately into a freehold. These leases are more particularly referred to below. (See § 7. *Leases and Licenses*).

(iv.) *Applications Made and Confirmed and Deeds Issued, 1901 to 1910.* During the year ended the 30th June, 1910, deeds of grant were prepared on the completion of conditional purchases for 1,079,887 acres, making the total number of conditional purchases

in existence at the end of the financial year 93,567 for a total areas of 14,362,463 acres. The following table gives particulars of conditional purchases for each year from 1901 to 1910:—

NEW SOUTH WALES.—CONDITIONAL PURCHASES, 1901 to 1910.

Year.	Applications Made.		Applications Confirmed.		Areas for which Deeds have been Issued.	
	Number.	Area.	Number.	Area.	During the Year.	To end of Year.
		Acres.		Acres.	Acres.	Acres.
1862-1900 ...	254,303	34,672,319	46,449	8,169,874	...	3,711,635
1901 ...	2,277	549,898	1,555	360,910	500,554	4,212,189
1902 ...	2,340	400,710	1,691	360,235	1,005,391	5,217,580
1903 ...	2,113	332,886	1,823	297,267	792,449	6,010,029
1904 ...	2,922	528,102	1,793	285,930	959,596	6,969,625
1905[1] ...	1,456	245,468	1,013	161,701	584,827	7,554,452
1906[2] ...	3,123	496,781	2,088	343,832	1,448,109	9,002,561
1907[2] ...	3,723	685,795	2,639	443,679	1,261,660	10,264,221
1908[2] ...	3,850	734,125	2,961	580,209	1,395,648	11,659,869
1909[2] ...	4,541	1,105,307	3,325	803,354	1,188,297	12,848,166
1910[2] ...	2,264	342,367	1,984	294,897	1,079,887	14,362,463
Total ...	282,912	40,093,758	67,321	12,101,888	10,216,418[3]	14,362,463

1. Half-year ended 30th June. 2. Year ended 30th June. 3. From 1901 to 1910 inclusive.

Further particulars as to the total areas alienated and in process of alienation are given below. (See § 11.)

(v.) *Homestead Selection.* Under a principle of classification and measurement introduced by the Act of 1895 suitable land may be classified for homestead selection, which tenure is similar in many respects to perpetual leases in other States. (See § 7, *Leases and Licenses*, below.) In a homestead selection, however, the freehold of the land may be acquired, subject to the payment of an annual rent, whereas in a perpetual lease the freehold is not alienated. The areas set apart for homestead selection are either good agricultural lands, divided into blocks, each large enough for one family, or suitable lands, within easy access of towns, divided to suit the requirements of business people. Conditions as to area of blocks, capital value, etc., are published in the *Gazette*, and the selector is limited to one block, as gazetted, the area of which must not be greater than 1280 acres. The selector must reside continuously on the land for five years, on the expiration of which a grant will be issued. After the issue of the grant he must continue to reside on the holding for at least seven months in the year. The annual rent for the first six years will be an amount equal to 1½ per cent. of the capital value of the land, after which the rent will be increased to 2½ per cent. of the capital value, which is determined according to the character and situation of the holding, and is subject to re-appraisement every ten years. Should an area granted under this tenure be found to be insufficient for the maintenance of a home in average seasons and circumstances, it may be increased to a home maintenance area by additional homestead selection. The additional holding need not necessarily adjoin the original holding, but must, in the opinion of the Land Board, be situated within a reasonable working distance thereof. Any person who is eligible to take up a conditional purchase may apply for a homestead selection. The incoming tenant must pay for improvements at a price to be determined by the Land Board, but if the appraised value of such improvements be greater than 20 per cent. of the estimated value as notified in the *Gazette*, the applicant may withdraw his application and obtain a refund of all moneys paid. Tenant right in improvements may be obtained under certain circumstances, and the holding may be so protected that it cannot, under any circumstances, be taken from the selector. Holders of conditional purchases may convert their holdings into homestead selections, and under the Crown

Lands Amendment Act 1908, homestead selections or grants may be converted into conditional purchases (see p. 245 *ante*).

During the year 1908-9, nineteen blocks, containing a large proportion of Mallee scrub and situated in an extensive tract of Crown lands in the Hay and Forbes land districts, were set apart for homestead selection in areas from 900 to 1280 acres, and at capital values of from 10s. to 13s. 4d. per acre. The district referred to embraces some 3,000,000 acres, and lies between the Lachlan and Murrumbidgee Rivers; it extends from Gunbar and Groongal on the west towards Condobolin, Wyalong, and Temora on the east. A design for the disposal of a further area of 48,000 acres, in blocks for homestead selection, conditional purchase lease, and settlement lease has been approved, and a contract has been let for carrying out a water-supply scheme for stock and domestic purposes.

During the year ended the 30th June, 1909, there were 275 original and 170 additional homestead selections applied for, comprising an area of 137,292 acres. During the same period the total number of applications confirmed was 336, comprising 79,179 acres, and 269 homestead grants were issued for 116,323 acres. The total number of homestead selections confirmed up to the 30th June, 1909, was 6794, comprising an area of 2,479,802 acres, the annual rent of which was £43,261, and the capital value £3,456,691. Further particulars for previous years are given in a later part of this section. (See § 11.)

3. **Victoria.**—The freehold of agricultural and grazing lands may be acquired by conditional purchase under the following tenures:—(i.) Agricultural allotments and grazing allotments; (ii.) agricultural and grazing allotments by selection from grazing area or perpetual leases; (iii.) Mallee agricultural licenses; (iv.) Murray settlements leases; and (v.) swamp or reclaimed lands purchase leases. Numbers (i.), (ii.) and (iii.) may be either on residential or on non-residential conditions. It is proposed to make various important alterations at an early date in the land laws of Victoria. Particulars of any Acts which are passed up to the latest available date prior to the publication of this book may be found in the Appendix.

(i.) *Agricultural Allotments and Grazing Allotments.* A selection may be obtained by any person over the age of eighteen years who has not already made a selection under the Land Acts, or has not taken up a pre-emptive right to the extent of the maximum number of acres in the first, second or third class (as the case may be), or who is not in respect of the license applied for an agent, servant, or trustee for any other person, or who has not, at the time of the application, entered into any agreement to permit any other person to acquire by purchase or otherwise the allotment in respect of which such application is made. An agricultural allotment is an area not exceeding 200 acres of first-class lands or 320 acres of second-class lands, and a grazing allotment is an area not exceeding 640 acres of third-class lands, which may be selected under license enabling the freehold to be paid for in twenty or forty years at the option of the applicant. The minimum price for the freehold is, in the case of first-class land, £1 an acre; second-class land, fifteen shillings an acre; and third-class, ten shillings an acre, and the prices may be enhanced according to the valuation of the land. Any person may become the licensee of more than one agricultural or grazing allotment, provided the total acreage does not exceed the limits for the various classes, but no selector may pick out the best or any part of an allotment, leaving the balance unselected.

Agricultural allotments and grazing allotments may be granted under either (*a*) residential or (*b*) non-residential licenses.

(*a*) *Residential Licenses* are granted for six years at a fee, according to the valuation of the land, of not less than one shilling an acre per annum in the case of first-class land, not less than ninepence an acre per annum in the case of second-class land, and not less than sixpence per acre per annum in the case of third-class land, payable half-yearly in advance. The licensee may not transfer, assign, or sublet, but may give a lien

up to half the value of the improvements effected to any person for money advanced: he must destroy vermin on the land, and must within six years from the issue of his license enclose the land with a fence, or he may, if he prove to the satisfaction of the Board that such a fence is impracticable or is not required, expend in permanent improvements an amount equivalent to the cost of fencing. The licensee must enter into occupation within twelve months from the issue of the license, and must occupy the allotment thenceforward during the continuance of the license. Any licensee may during each year, however, absent himself from his allotment for not more than three months, by registering with the district land officer a notice of his intention to so absent himself; and if his home is situated upon the allotment the Board may consent for a specified period to a substituted occupation by the wife or by a child over the age of eighteen years; or, if he has no wife or child, by the father or mother of the licensee, provided that he or she is dependent upon him for support. During the currency of the license the Crown reserves the right to resume possession of any of the land required for reserves or for public or mining purposes, subject to repayment to the licensee of all moneys paid by him as rent to the Crown, and of a reasonable sum as compensation for such resumption. Substantial and permanent improvements must be made to the value of £1 for every acre if of first-class land, or of the value of fifteen shillings for every acre if of second-class land, or of the value of ten shillings for every acre if of third-class land, during the following periods and on the following basis:—If the land be first-class land, to the value of three shillings and fourpence for each acre before the end of the second year from the date of the license, another three shillings and fourpence before the end of the third year, another three shillings and fourpence before the end of the fourth year, and the balance before the end of the sixth year; if the land be second-class, to the value of two shillings and sixpence for each of the same periods as in the case of first-class land; and if the land be third-class, to the value of five shillings for each acre before the end of the third year from the date of license, and the balance before the end of the sixth year. Upon satisfying the Board that all conditions of the license have been fulfilled, the licensee is entitled at any time within twelve months after six years from the commencement of the license to obtain a grant upon payment of the balance of the purchase-money; or otherwise he may obtain a lease of the allotment for a term of fourteen years at the same rental as the fee paid under license. The lessee is entitled upon payment at the end of the term of the last instalment due on account of the rent reserved, or at any time during the currency of the lease by paying the difference between the amount of rent actually paid and the entire sum payable for the purchase of the land, to obtain a grant in fee of the lands leased.

Residental licenses are also granted, subject to the same convenants and conditions as stated above, but varied with regard to the term and to the amount of the fee and rent reserved, as follows, being double the term at half the yearly payment:—The fee for occupation to be, according to the valuation of the land, not less than sixpence, fourpence halfpenny, and threepence an acre per annum in the case respectively of first, second, and third-class land, the term of a lease to be thirty-four years' annual rent of the same amounts, instead of only fourteen years at double the rental.

(*b*) *Non-residential Licenses* for both agricultural and grazing allotments may be issued on conditions identical with the above, with the exception that the term of the lease granted after the license period must be on the fourteen years basis only. The improvements which must be effected are as follows:—In the case of agricultural allotments, to the value of six shillings and eightpence an acre during each year of the license for first-class land, and five shillings an acre during each of the first three years of the license of second-class land, and in the case of grazing allotments, three shillings and fourpence an acre during each of the first three years, for third-class land. During any one year non-residential licenses may not be issued for more than 50,000 acres.

(ii.) *Agricultural and Grazing Allotments by Selection from Grazing Areas and Perpetual Leases or Auriferous Lands Licenses.* The lessee of a grazing area lease may

select thereout, under residential conditions (see 3 (i.) above), and if the residence and improvement conditions necessary under an agricultural or grazing allotment license have already been complied with, the license may be antedated any period, not exceeding 6 years, upon payment of the difference in the rent for such period, and a grant may, therefore, be obtained immediately. The lessee of a grazing area may, if preferred, select thereout under non-residential conditions (see 3 (i.) (*b*) above). Grazing area leases are more particulaly referred to below, under the heading of *Leases*. (See § 7, 3 (i.) Either residential or non-residential, agricultural or grazing allotments may also be selected under certain circumstances out of areas held under perpetual leases (see § 7, 3 (ii.) below) or auriferous lands licenses. (See § 7, 3 iv.)

(iii.) *Mallee Agricultural Licenses*. These licenses are issued for first, second, and third-class Mallee lands, similarly to licenses for agricultural and grazing lands explained above, but for larger areas, the maximum being 640, 1000, and 1280 acres of first, second, and third-class land respectively. Selections must form one continuous area, separated only by roads. The purchase price for selection is fixed at £1 an acre for first-class, fifteen shillings for second-class, and ten shillings for third-class land, unless the value of the land is greater than the amounts stated. The licenses are for six years, and are issued subject to similar conditions (both residential and non-residential) as agricultural allotments. (See above.) At the expiration of a license, or on obtaining a lease, if all conditions have been complied with, the selector is entitled to a grant upon payment of the difference between the amount of rent actually paid and the entire purchase-money. Holders of "Mallee allotment" leases (see 6, 2 iv.) may select thereout an agricultural allotment license as above, and if the residence and improvement conditions necessary under such a license have already been complied with, the license may be ante-dated any period not exceeding six years, or in case of the full six years compliance, the lease or Crown grant may be obtained without the issue of a license. Credit is given for all rents paid under Mallee allotment lease.

(iv.) *Murray Settlements Leases*. Under the Murray Settlements Act 1907, any Crown lands within the Mallee country or Mallee border may be subdivided into either (*a*) *Homestead allotments* near the River Murray, each containing an area of not more than fifty acres, or (*b*) *Mallee farm allotments*, situated more or less remote from the homestead allotments, and each containing an area not exceeding 640, 1000, 1280, or 1600 acres if of first, second, third, or fourth class land respectively. Payment of the value of a holding, with interest at not less than 4½ per cent. per annum, must be made by sixty-three half-yearly instalments, and the prescribed improvements must be carried out. Part II. of the Act provides for the construction and maintenance of irrigation works and gives power to constitute irrigation areas. Two settlement areas have been laid out under the Act with due regard to irrigation conditions, viz., those at White Cliffs and Nyah, and at the former place a dry farm area has also been subdivided. At White Cliffs 6273 acres were subdivided as homestead allotments, and 50,345 acres as dry farm allotments, while at Nyah 1960 acres were subdivided as homestead allotments. At the commencement of the year 1910, there were 94 allotments held under the Act, covering an area of 3390 acres.

(v.) *Swamp or Reclaimed Lands Purchase Leases*. The special conditions attached to conditional purchase leases of swamp or reclaimed lands are referred to below. (See § 7, 3 v.)

(vi.) *Area Selected Conditionally and Area Sold, 1901 to 1909*. The subjoined table gives particulars shewing the areas selected conditionally during the year 1901 and from 1905 to 1909. A large proportion of the areas shewn has reverted to the Crown in consequence of non-fulfilment of conditions.

VICTORIA.—AREAS PURCHASED CONDITIONALLY, 1901 to 1909.

Particulars.	1901.	1905.	1906.	1907.	1908.	1909.
	Acres	Acres.	Acres.	Acres.	Acres	Acres.
With residence	466,155	189,442	149,893	151,865	184,942	214,999
Without residence	50,257	27,977	23,220	39,367	28,941	42,180
Total	516,412	217,419	173,113	191,232	213,883	257,179
No. of selectors	2,979	1,448	1,579	1,518	1,533	1,736

Particulars as to total areas alienated and in process of alienation are given in a later part of this section. (See § 11.)

4. **Queensland.**—The several types of selections under which the freehold may be acquired by conditional purchase are as follows:—(i.) Agricultural farms; (ii.) agricultural homesteads; (iii.) prickly pear selections; and (iv.) free homesteads.

Land is made available for selection by proclamation in the *Gazette*, specifying the modes in which the land may be selected, the area, rent, price and conditions. Any person of either sex over the age of sixteen years, who does not seek to acquire the land merely as the agent or servant of another, is allowed to select; but a single girl under the age of twenty-one is debarred from selecting an agricultural or grazing homestead as also is a married woman, unless she is judicially separated, or possesses separate estate, or is living apart from her husband and has been specially empowered by the Land Court to select a homestead. A married woman may, however, acquire a grazing homestead by transfer after the expiration of five years of the term of the lease. An alien may, under certain circumstances, acquire a selection, but must become a naturalised British subject within three years.

Applications for selections must be made in the prescribed form, in triplicate, and be lodged with the land agent for the district in which the land is situated, and must be accompanied by the prescribed deposit. In the case of a prickly pear selection the deposit must be the full amount of the survey fee, and in other cases, except free homesteads, a year's rent and one-fifth of the survey fee. In the case of a free homestead application the deposit consists of an application fee of £1 and one-fifth of the survey fee. If land is open for selection in two or more modes, alternatively, and there are simultaneous applications to select it under different modes, priority among such applications is given to an application for the land as an agricultural homestead, as against an application for it as an agricultural farm, and to an application for it as an agricultural farm as against an application for it as an unconditional selection. In the case of simultaneous applications for the same land as an agricultural farm, priority is secured by an applicant other than a married woman or a single girl under twenty-one years of age, who, when making application, undertakes to personally reside on the land during the first five years of the lease. When an application has been accepted by the Land Commissioner and approved by the Land Court, and the applicant has paid for any improvements there may be on the land, he becomes entitled to receive a license to occupy the land in the case of an agricultural selection or a grazing selection, or a lease in the case of a scrub selection, unconditional selection, or prickly pear selection. Within six months after the issue of a license, the selector must commence to occupy the land, and thereafter continue to occupy it in the manner prescribed. Selectors may, under certain conditions, by application to the Under Secretary for Public Lands, obtain concessions in respect of the carriage by rail to the railway station nearest to his selection of himself, his family and his effects, and in respect of the carriage of any such material intended for use in improving the selection.

(i.) *Agricultural Farms.* The more accessible lands are usually set apart for agricultural selection up to the maximum area of 1280 acres allowed to each selector of an

agricultural farm. If the same person be the selector of both an agricultural farm and an agricultural homestead, the joint areas must not exceed 1280 acres. The term is twenty years and the price ranges from ten shillings per acre upwards, as may be fixed by the proclamation. The annual rent is one-fortieth of the purchasing price, and the payments are credited as part of the price. The selector must occupy the land continuously, either in person or by agent, for the whole term of the lease, but where priority of application has been conceded the condition of personal residence during the first five years of the term is enforced. The cost of survey, ranging from about £9 for a farm of 160 acres to about £18 for a farm of 1280 acres, must be borne by the selector.

Within five years from the issue of the license to occupy, the selector must enclose his land with a substantial fence, or make permanent improvements of equivalent value. On the completion of the improvements the selector becomes entitled to a lease of the farm, and may thereafter mortgage it; or, with the permission of the Minister, may subdivide or transfer it; or, with the approval of the Court, may sublet it. After five years of the term have elapsed, the prescribed conditions of occupation and improvement having been duly performed, a deed of grant may be obtained on payment of the balance of the purchase money.

During the year 1909 applications were accepted to select agricultural farms to the number of 1433 for 541,293 acres, an average area of 378 acres, at an average price of 18s. 1d. per acre. The number of selections and the total area selected were lower than the corresponding figures for the previous year by 175 and 65,871 acres, respectively. The average area is the same as in 1908 and the average price higher by 1s. 6d. per acre.

(ii.) *Agricultural Homesteads.* When land is taken up as an agricultural homestead, the maximum area is restricted to 160 acres, 320 acres, or 640 acres, according as the price specified in the proclamation is determined at not less than twenty shillings; less than twenty shillings but not less than fifteen shillings; or less than fifteen shillings per acre respectively. The price for a homestead is two shillings and sixpence an acre, the annual rent threepence an acre, and the term ten years. The selector must himself reside continuously on the land, and within five years from the issue of the license to occupy, must also fence the land, or must make permanent improvements of equivalent value. On the completion of the improvements the selector is entitled to a lease, which, however, cannot be transferred or mortgaged.

At any time after five years from the commencement of the term, on the selector proving that the conditions have been performed and that the sum expended in improvements on the land has been at the rate of ten shillings, five shillings, or two shillings and sixpence an acre respectively according to the value of the land, he may pay up the remaining rent, so as to make his total payments equal to two shillings and sixpence an acre, and obtain a deed of grant of the land in fee simple. Under the amending Act of 1905 agricultural homesteads may, on certain conditions, be converted into agricultural farms.

Particulars of agricultural homesteads are given in par. (iv.) hereinafter.

(iii.) *Prickly Pear Selections.* Prickly pear infested selections comprise areas thickly covered with prickly pear. The area selected must not exceed 5000 acres. The term is fifteen years, with a peppercorn rental for the first ten years, and an annual rent of one-fifth of the purchasing price for the remaining five years. During the first ten years of the term the land must be absolutely cleared of prickly pear (one-tenth during each year), and must be kept clear for the remainder of the term. Under the amendment Act of 1909, an applicant for a prickly pear selection who declares in writing that he undertakes to personally reside on the land during the first five years of the lease, is entitled to priority over other applicants.

Prickly pear frontage selections are confined to prickly pear frontage areas, comprising lands free from or only lightly infested with prickly pear, but which adjoin and do not extend for more than seven miles from lands heavily infested. The greatest area allowed is 5000 acres. The term is fifteen years, with a peppercorn rental during the first five years, and an annual rent of one-tenth of the purchasing price during the remaining

ten years. During the first five years the land must be absolutely cleared of prickly pear (one-fifth each year) and must be kept clear during the balance of the term.

In the case of prickly pear (bonus) selections, the freehold of the land, and a bonus in addition, are granted in return for the complete eradication of the pear. The maximum amount payable as bonus is stated in the opening proclamation, but each applicant must lodge a tender specifying a bonus per acre not in excess of that mentioned in the proclamation. The size of the portions opened out must not exceed 2560 acres. The term of the lease is ten years, at a peppercorn rental throughout. The land must be absolutely cleared of prickly pear during the first seven years (one-seventh each year), and the land must be maintained clear till the end of the lease. One-seventh of the bonus payable may be claimed at the end of each of the first seven years of the term on proof to the satisfaction of the Commissioner that the condition of eradication has been complied with. If the eradication be completed at an earlier date than is required by the condition of the lease, the balance of the bonus will then become payable.

In all prickly pear selections the freehold may be obtained prior to the expiry of the term on proof being made that the land has been maintained free from prickly pear for three years consequent on the eradication having been completed in advance of the prescribed period.

Particulars of prickly pear selections are given in the following paragraph.

(iv.) *Number and Area of Conditional Purchases, 1901 to 1909.* The following table shews the number and area of conditional purchases for which applications were accepted during each year from 1901 to 1909 :—

QUEENSLAND.—CONDITIONAL PURCHASES (APPLICATIONS ACCEPTED), 1901 to 1909.

Year.	Agricultural Farms.		Agricultural Homesteads.		Prickly Pear Selections.		Total.	
	Number.	Area.	Number.	Area.	Number.	Area.	Number.	Area.
		Acres.		Acres.		Acres.		Acres.
1901 ...	661	160,804	669	155,512	19	48,450	1,349	364,766
1902 ...	683	168,301	523	118,246	10	51,058	1,216	337,605
1903 ...	499	124,026	424	89,037	6	5,423	929	218,486
1904 ...	516	136,092	355	73,705	1	200	872	209,997
1905 ...	962	254,117	448	97,543	7	31,457	1,417	383,117
1906 ...	1,427	438,605	392	96,561	3	9,562	1,822	544,728
1907 ...	1,948	689,916	267	68,464	439	524,956	2,654	1,283,336
1908 ...	1,608	607,164	229	55,152	714	870,849	2,551	1,533,165
1909 ...	1,433	541,293	162	39,654	496	665,614	2,091	1,246,561

The average area of agricultural farms selected during the year 1909 was 378 acres at an average price of 18s. 1d. per acre ; the average area of agricultural homesteads was 245 acres. The average price of the land selected as prickly pear infested selections during the year was 5s. 2½d. per acre, and of prickly pear frontage selections was 5s. 5½d. per acre.

Particulars as to total areas alienated and in process of alienation may be found below. (See § 11.)

(v.) *Free Homesteads.* This form of tenure was introduced by the Land Acts Amendment Act 1908. Any country lands may be proclaimed open for free homestead selection. The maximum area which may be selected in this manner is 160 acres. The term is five years, and during that period the selector must occupy the land by personally residing on it, and must effect improvements to the total value of ten shillings per

acre. A free homestead cannot be sold or mortgaged until a deed of grant is obtained. During the year 1909 10,100 acres of land were opened for selection as free homesteads and 28 applications, totalling 4480 acres, were accepted.

5. **South Australia.**—The types of conditional purchases under which land may be alienated in this State (exclusive of the Northern Territory) are as follows:—(i.) Agreement to purchase, and (ii.) Agreement under the Pinnaroo Railway Act 1903. The Land Board, composed of three members, arranges the subdivision of lands and fixes the price at which each block is to be offered. When approved by the Commissioner the lands are gazetted as open to application, which must be made in writing, and must specify the name, address, and occupation of the applicant, and the land applied for. A month's notice is usually given, during which applications may be made. No person under eighteen years of age can hold a lease, agreement, or license under the Act. The applicant has the choice as to whether he will take the land on perpetual lease or on an agreement to purchase, except in the case of repurchased lands and lands within the schedule to the Pinnaroo Railway Act, which are offered on agreement to purchase only. As early as possible after the date for receiving applications the Board meets, takes the evidence of applicants, and allots the blocks to each applicant who, in the opinion of the Board, should have the block. Preference is given to applicants who will reside on the land applied for, involving continuous residence on the land for at least nine months in each year. Other considerations which assist the Board to come to a decision are the ability, through means and experience, to utilise and improve the land applied for, and the number of members of the family which would become settled on the land. Any blocks not allotted on the date fixed may be applied for, and may be allotted on application. Agreements and leases are liable to forfeiture if payments due thereunder are six months in arrear and remain unpaid for three months after the same have been demanded, or for breach of any of the covenants or conditions. In place of forfeiture of any lease or agreement the holder's interest therein may be sold by auction, the proceeds to pay all arrears on the land and expenses of sale. If any balance remain the outgoing holder may be paid for substantial improvements made by him on the land. Any purchase-money the outgoing holder may have paid on the land sold may also be reimbursed to him if the proceeds of the sale admit. Interest at the rate of 5 per cent. is charged on arrears due under leases and agreements; if over two months in arrears the Commissioners may recover the same in court. No perpetual lease or agreement to purchase is granted for lands the unimproved value of which exceeds £5000, or in such a way that the lessee or purchaser would hold lands under any tenure, except under pastoral lease, the aggregate unimproved value whereof would, in the opinion of the Board, exceed £5000. Exceptions are made in cases where land to be included in the lease or agreement is suitable only for pastoral purposes, the carrying capacity thereof unimproved, and of all other lands held by the lessee or purchaser under any tenure not exceeding 5000 sheep; if the land is outside Goyder's line[1] the limitation may be increased to a carrying capacity of 10,000 sheep. Municipal Corporations and District Councils may apply for land in the same manner as individuals.

(i.) *Agreement to Purchase.* No lands may be held under this form of tenure unless they have been surveyed, or their boundaries delineated on the public maps. The Commissioner, on the recommendation of the Land Board, determines the area of blocks, and the price and annual rental at which each block may be taken up on lease with the agreement to purchase. Applications must be made in writing to the Commissioner, and must be accompanied by a deposit equal to the first half-yearly instalment of the purchase-money of the land and improvements. The purchaser must covenant to pay for his block at the price fixed by the Land Board, and to pay the purchase-money and interest

1. Goyder's line is not exactly based on rainfall, but on the evidence of vegetation ("salt-bush" and "blue-bush" etc.), and marked the northern limit of what was thought to be fit land for agricultural pursuits. The vegetation which was supposed incapable of flourishing in regions of regular rainfall afforded the indications for locating the line.

for land and improvements, if any, at not less than the rate of 2 per cent. per annum by sixty equal half-yearly instalments payable in advance. The land must be fenced within five years, and vermin and weeds must be destroyed. Having complied with the terms and conditions of the agreement, the purchaser has the option of completing the purchase of his block at any time after the expiration of six years, on paying all principal due under his agreement and all interest due up to the time of purchase. Where the land is allotted on personal residence, each agreement must contain a covenant for personal residence by the purchaser on the lands purchased for nine months during each year. The conditions as to reservation of Crown rights, and also as to subletting, are the same as in the case of perpetual leases. (See § 7 below.)

(ii.) *Pinnaroo Railway Lands.* Under the Pinnaroo Railway Act 1903 provision was made for opening up to conditional purchase certain scheduled lands, amounting to about 1,500,000 acres of good agricultural country in the vicinity of a line from Pinnaroo to Tailem Bend, a distance of eighty-seven miles. The line was opened for traffic in 1906. The lands scheduled may be sold by the Crown under agreement, with a covenant to purchase the same at the price fixed by the Land Board, together with interest thereon at the rate of 2 per cent. per annum, by sixty half-yearly payments, payable in advance. Any purchaser may complete his purchase at any time. Application is to be made, the price fixed and accepted, the agreement entered into and executed, and all matters in connection with the sale, transfer, resale, surrender, and forfeiture of any of the lands are to be carried out, as far as practicable, as if the lands were taken up under the existing regulations as to the acquisition of land for the purposes of closer settlement.

In the annual report of the Surveyor-General for the year 1909-10 it is stated that the opening up of the Pinnaroo district and the change which has taken place in the value of land, which prior to the proposal to construct a railway was almost *nil*, and now realising as much as £10 and £12 an acre, shews in a remarkable way the advantages of the system of constructing railway lines in advance of settlement, and also that, with the use of phosphates and other manures and a scientific system of farming, hardly any class of land can be said to be valueless for agricultural purposes. The total area now held is 548,803 acres; of this area 25,478 acres are held on perpetual and right of purchase leases, allotted before the Pinnaroo Railway Act was passed.

(iii.) *Particulars of Conditional Purchases, 1901 to 1909.* The subjoined table gives particulars of the areas alienated by conditional purchase, on fulfilment of the conditions, at the end of 1901 and from 1905 to 1909 inclusive:—

SOUTH AUSTRALIA.—AREAS ALIENATED UNDER AGREEMENTS TO PURCHASE, 1901 to 1909.

Year	1901.	1905.	1906.	1907.	1908.	1909.
Area in acres ...	57,460	16,106	6,439	57,890	68,977	128,656

Particulars as to the total areas alienated and in process of alienation are given in a later part of this section. (See § 11.)

6. **Western Australia.**—The various types of selections under which the freehold can be alienated by conditional purchase in this State are as follows:—(i.) Residential conditional purchase; (ii.) non-residential conditional purchase; (iii.) conditional purchase by direct payment; (iv.) conditional purchase of blocks for vineyards, orchards, or gardens; (v.) conditional purchase of grazing lands; and (vi.) free homestead farms.

All applications must be lodged, with the prescribed deposit and fees, at the agency in which the land is situated. No person may acquire under homestead farm, conditional

purchase, and grazing lease, collectively, or any two or more of them, either as lessee or transferee, more than 2000 acres of cultivable land (that is, land acquired as homestead farm and by conditional purchase), or an equivalent area of grazing land, or cultivable and grazing land mixed. Where a man has selected up to the maximum allowed, his wife may hold a further area of 1000 acres of cultivable land or its equivalent area of grazing or of cultivable and grazing land. Five acres of grazing land are deemed to be an equivalent of two acres of cultivable land, and all unclassified land disposed of prior to the 1st February, 1907, is deemed to be cultivable land until otherwise classified by the Lands Department. If the holder require the land to be classified he must pay the prescribed fee.

(i.) *Residential Conditional Purchase.* Under this form of tenure any person over the age of sixteen years may select from a minimum area of 100 acres to a maximum of 1000 acres. The price of the land varies from ten shillings to forty shillings per acre payable in twenty years by half-yearly instalments, or sooner, at the occupier's option, but for the first three years of the lease only sixpence per acre per annum is charged; subsequent payments are increased when the land is over ten shillings per acre. Applications must be accompanied by a deposit of a half or a quarter-year's rent, as the case may be; that is to say, if the application be made during the first quarter of the half-year, a half-year's rent is required; if in the second quarter, only a quarter-year's rent need be deposited. In the event of the application not being approved the deposit is refunded. The cost of survey is paid by the selector in easy instalments, viz., it is included in the price of the land when within "surveyed areas," and when it is outside such areas and required to be surveyed, the survey fees payable are one-fourth with deposit and balance with interest in forty instalments with purchase-money. The selector is required to take up residence on his allotment within six months from the date of approval, and to reside thereon for at least six months during each of the first five years; the residence condition may, however, be performed on any rural land held by the selector within twenty miles. Residence by the wife, parent, or a child of over sixteen years of age, may also be accepted. Improvements must be effected equal in value to the amount of the purchase-money, and must be at the rate of one-fifth of the purchase-money every two years of the first ten years, but are not required to be more than £1 per acre in value should the price of the land exceed that amount. One-half of the land must be fenced within five years and the whole within ten years. Half the value of great and small stock-proof fencing is allowed towards the improvements required, and two-thirds of the value of a dog or rabbit-proof fence; but no allowance in respect to the fencing is made until after the fourth year of the term of the lease. Where any Crown land open for selection is situated within a distance prescribed by regulations from a railway, or the line of an authorised railway, the Minister may prescribe by regulations special conditions as to the improvements in substitution for, or in addition to, the conditions prescribed by the principal Act, but the holder of such land shall not be required to carry out any improvements that exceed in cost the amount that the Agricultural Bank is prepared to lend such holder. A lease fee of ten shillings is payable with every application for a lease, at the expiration of which, or at any time after five years from the date of which, provided that all the conditions of residence and improvements have been complied with and the purchase-money paid, the lessee may obtain a Crown grant of the land on payment of the grant fee of thirty shillings.

(ii.) *Non-residential Conditional Purchase.* If the selector does not wish to reside upon the land he may take up from 100 to 1000 acres, subject to the same conditions with regard to improvements, purchase-money, and survey, lease, and grant fees as in the case of residential purchases, with the exception that the total value of the improvements required is 50 per cent. over and above the amount of the purchase-money, but not more than thirty shillings per acre need be spent on improvements, although the price of the land may be over £1 per acre.

(iii.) *Conditional Purchase by Direct Payment.* Any unalienated Crown lands may be acquired by conditional purchase by direct payment. The price is not less than ten shillings an acre, payable within twelve months; the maximum area that may be selected by one person is 1000 acres, and the minimum is 100 acres. An amount equal to 10 per cent. of the purchase-money must be deposited with the application, on the approval of which by the Minister a license is issued for seven years, dating from the first day of the quarter next preceding the date of the approval of the application. The balance of the purchase-money must be paid within twelve months by four equal quarterly instalments, or sooner, at the option of the selector, but no Crown grant will be issued until the Minister is satisfied that the prescribed conditions have been fulfilled. The licensee must within three years fence in the whole of the land, and within seven years must expend upon the land in prescribed improvements at least ten shillings an acre in addition to the cost of fencing. The cost of survey must be paid by the purchaser as follows:—One-quarter is payable with the application, and the balance, plus 5 per cent. interest, is payable by three quarterly instalments. The Crown grant may be obtained at any time, provided that all the conditions have been complied with and the purchase-money and fee have been paid.

(iv.) *Conditional Purchase of Small Blocks for Vineyards, Orchards or Gardens.* Areas of from five to fifty acres may be selected for any of these purposes on the following terms:—The price of the land is not less than £1 an acre; a deposit of 10 per cent. of the purchase-money must be made upon application, and the balance must be paid within three years from the date of the approval of the application by equal half-yearly instalments. One quarter of the cost of survey is payable with application, and the balance, plus 5 per cent. per annum interest, is payable by equal amounts every half-year during the three years. A lease is granted for three years, during which time the whole of the land must be fenced with a great and small stock-proof fence, and at least one-tenth of the area must be planted with vines or fruit trees, or cultivated *bonâ-fide* as a vegetable garden. A Crown grant will be issued as soon as all the conditions have been complied with and the purchase completed.

(v.) *Conditional Purchase of Grazing Lands.* The Governor may declare any lands which, in the opinion of the Minister, are unsuitable for agriculture, but suitable for grazing purposes, and which are not within an agricultural area, as open for selection as grazing leases. The application must be accompanied by the usual deposit of rent, as explained above with reference to conditional purchase with residence, and the lease fee of ten shillings. If the land is unsurveyed, one-quarter of the cost of survey must be paid with the application, and the balance, plus 5 per cent. per annum interest, extending over twenty years, which is the term of the lease. An inspection fee may be charged if the Minister so directs. The land is inspected and reported on by a surveyor, and the price is fixed by the Governor, but may not be less than three shillings and ninepence per acre, and must be paid half-yearly at the rate of one-twentieth of the total purchase-money per annum. The maximum area allowed is 5000 acres, and the minimum 500 acres, but if the land applied for adjoins a holding of the applicant the minimum may be 300 acres. Within six months the lessee must take possession of his lease, and residence is required for six months of the first year and for nine months during each of the next four years. These conditions as to residence may be performed by self or by an agent or servant of the lessee, and if the lessee be the owner of any rural lands within twenty miles, and reside thereon, such residence is sufficient. Expenditure on improvements to the extent of one-fifth of the purchase-money is required during every two years of the first ten years of the lease, and the whole of the land must be fenced within the first ten years. Half the value of a great and small stock-proof fence, and two-thirds of the value of a dog or rabbit-proof fence, may be allowed towards the value of the improvements required after the fourth year of the lease. At the expiration of the term of the lease, or at any time after five years from the date of the lease, a Crown grant will

be issued, provided that all conditions have been complied with and the full purchase-money paid.

(vi.) *Free Homestead Farms.* Every person who is not already the holder of more than 100 acres of land within the State, and being the head of a family, or a male of sixteen years of age and upwards, may select an area of from 10 to 160 acres as a free homestead farm, on lands declared open for such selection within the South-West, Central, or Eucla Divisions, not being within a goldfield. The application must be accompanied by a statutory declaration with a one-shilling duty stamp and a fee of twenty shillings. If a homestead farm is selected out of a surveyed block within a "surveyed area" the balance of which is taken up by the same applicant, no survey fee is payable, but if it is selected outside such an area and is required to be surveyed, the survey fees payable are one-fourth with the deposit and the balance with interest in three equal half-yearly instalments. Upon approval of the application an occupation certificate for seven years is issued; the selector must take personal possession of the land within six months from the date of such certificate, and must reside thereon for at least six months in each of the first five years of the term, but residence on rural land held by the same person within twenty miles of the free homestead farm is sufficient compliance with the above residence condition. Residence of the holder's wife, parent, or child over sixteen years of age, may be accepted at the Minister's discretion. Four shillings per acre must be spent in prescribed improvements during the first two years; a further six shillings per acre during the next three years; and an additional four shillings per acre during the last two years. Not more than £30 of the amount spent on a habitable house will be allowed towards the total amount of fourteen shillings per acre required to be expended upon improvements. Half of the land must be fenced during the first five years, and the whole must be enclosed with a great and small stock-proof fence by the end of the term of seven years. Half the value of a sheep and cattle-proof exterior fence, and two-thirds of the value of a rabbit or dog-proof exterior fence will be allowed towards the amount required to be spent upon improvements after the fourth year of the term. A Crown grant will be issued upon compliance with all the conditions and upon payment of a fee of thirty shillings at the expiration of the term of seven years, but may be issued earlier if the holder has completed twelve months' residence, has made all the required improvements, and pays the sum of five shillings per acre for the land. The Crown grant for a homestead farm which is portion of a surveyed block will not be issued separately unless the holder pays the prescribed survey fees and thirty shillings for the Crown grant.

(vii.) *Conditional Auction Sales.* Sales of town and suburban lands at auction have already been referred to. (See § 5, vi., above.) In the case of suburban lands the sale is of the nature of a conditional purchase, inasmuch as the land must be fenced within two years. In the case of the sale at auction of suburban lands set apart for cultivation, the balance of the purchase-money, after paying a deposit of 10 per cent., must be paid by half-yearly instalments within five years; the land must be fenced within two years, and within three years at least one-tenth of the area must be planted as an orchard or vineyard, or cultivated as a vegetable garden, or one-quarter of the area must be cultivated otherwise. The purchaser may pay the balance of the purchase-money at an earlier date, if he so desire, but no grant may issue until the prescribed improvements have been effected.

(viii.) *Areas Alienated Absolutely under Forms of Conditional Purchase, 1901 to 1910.* The following table shews the area of the selections for which grants were issued, the prescribed conditions having been fulfilled, during the year 1901 and from 1905 to 1910.

Particulars as to the total areas alienated absolutely, and in process of alienation, are given in a later part of this section. (See § 11.)

WESTERN AUSTRALIA.—AREAS SELECTED CONDITIONALLY FOR WHICH CROWN GRANTS WERE ISSUED, 1901 to 1910.

Particulars.	1901.	1905.	1906.[1]	1907.[1]	1908.[1]	1909.[1]	1910.[1]
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Free homestead farms	147	9,471	9,655	12,765	16,122	18,482	35,334
Conditional purchases	5,234	19,100	20,351	38,116	138,812	61,272	64,957
Poison land leases ...	...	11,521	...	135,444	130,729	2,668	3,284
Village allotments ...	...	3	2	...	...	...	...
Total	5,381	40,095	30,008	186,325	285,663	82,422	103,575
Number of holdings	48	186	177	356	437	475	564

1. For financial year ended the 30th June.

(ix). *Area Conditionally Alienated, 1901 to 1910.* The following table shews the areas conditionally alienated under various methods of selection during the year 1901 and from 1905 to 1910 :—

WESTERN AUSTRALIA.—AREAS CONDITIONALLY ALIENATED, 1901 to 1910.

Particulars.	1901.	1905.	1906.*	1907.*	1908.*	1909.*	1910.*
Conditional Purchase—	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Deferred payments (with residence)	161,302	573,894	465,326	355,778	447,159	595,115	910,953
" " (without residence)	46,498	212,414	237,016	284,953	199,584	265,561	475,860
Direct payments (without residence)	1,909	3,299	3,236	2,175	2,645	1,762	3,641
Village Allotments	...	8	15	9	3	...	...
Free Homestead Farms ...	63,623	203,426	155,740	109,090	189,086	257,528	238,102
Under the Agric. Lands Purchase Acts	4,295	32,667	24,933	11,674	8,201	35,599	23,787
Homestead or Grazing Leases	64,834	208,831	25,578	375	295,696	850,066	238,876
Poison Land Leases[1]	9,530	779	...	...	...	...	...
Workingmen's Blocks[2]	8	106	104	149	131	189	148
Total	351,999	1,235,424	911,948	764,203	1,142,505	2,005,820	1,891,367
Number of holdings	1,888	5,524	4,291	3,573	4,362	5,861	5,403

* For year ended ended 30th June. 1. Provisions repealed by Act of 1906.
2. Closer settlement. (See § 8. 7, below.)

Particulars as to the total areas in process of alienation are given in a later part of this section. (See § 11.)

7. **Tasmania.**—The various types of conditional purchases in this State are as follows:—(i.) Selection of rural land ; (ii.) homestead areas ; (iii.) selection in mining areas ; and (iv.) sales by auction on credit, either of town or rural lands. Upon all first class lands purchased or selected under the Acts now in force habitual residence is necessary for five years, commencing to run two years after the date of purchase, and must be continuous ; but on land within a mining area the necessary period of residence is reduced to three years. In both cases this may be complied with by the selector himself or some member of his family, or someone employed by him or on his behalf. If purchased at auction on credit all lands (town or rural) must be improved to the value of a sum at least equal to the sale price of the land. Upon first-class lands the selector must expend a sum of not less than two shillings and sixpence an acre of the whole area in substantial improvements every year for the first eight years. By paying off before the expiration of the period of credit all purchasers and selectors obtain a rebate of the added premium in proportion to the unexpired period of credit. Second-class lands must be

improved to the value of at least one shilling an acre per annum for the first five years before the selector can pay up and obtain his deed of grant; and in the case of third-class lands the selector must expend on substantial improvements a sum amounting at least to sixpence per acre per annum during the first five years before the balance of the purchase-money can be paid and the deed of grant issued. Improvements on all lands must be of a substantial nature, and include dams, wells, cultivation, fences, clearing or draining of land, the erection of a dwelling-house or farm or other buildings upon and permanently attached to the soil of such land.

No person may hold more than 200 acres of first-class, 250 acres of second-class, and 500 acres of third-class Crown lands on credit at one time, either by purchase, selection, or purchase at auction. In order to make the payments during the first year of purchase as light as possible the Lands Department advances to the selector of any first-class land four-fifths of the amount of fee necessary for the survey of the land. The balance is payable in the next succeeding four years, together with interest at the rate of two shillings and sixpence in the pound. For lands purchased by auction, and for second and third-class lands, the survey fee must be paid in full. The amount of this fee, for first-class lands, ranges from £4 10s. to £15 15s. for selections of from 25 to 200 acres respectively; for second-class lands the fee ranges from £6 5s. to £15 10s. for selections of from 30 to 250 acres; and for third-class lands it ranges from £11 to £20 for selections of from 60 to 500 acres respectively.

(i.) *Selection of Rural Lands.* Any person of eighteen years of age and upwards may select an area of from 15 to 200 acres of first-class land, and from 30 to 250 acres of second-class land, or from 60 to 500 acres of third-class land. Application must be made in a prescribed form obtainable from the various post and police offices throughout the State, and from the Crown Lands Office, Hobart, and Lands Branch Office, Launceston. Intending selectors can obtain ready assistance in making their choice of lands from the District Surveyors or from the officers of the Crown Lands Office. The price of first-class land is not less than £1 an acre, with one-third of that price added as a premium for credit, which extends over a period of eighteen years. For second-class land ten shillings an acre is the minimum price, with one-third added for credit, the period of which is fourteen years. For third-class land the price is not less than five shillings an acre, with one-third added for fourteen years.

In the case of first-class land the purchaser must pay a deposit of twopence an acre, and must pay the residue by eighteen annual instalments at the following rates per acre:—Threepence during the first and second years; one shilling during each year from the third to the sixth; one shilling and sixpence during each year from the seventh to the tenth, and two shillings during each of the remaining eight years. For second or third-class land the purchaser must pay a deposit of one-fortieth part of the purchase-money, and must pay the residue by fourteen annual instalments, of which the first two instalments must equal one-twenty-sixth part of the residue, and each remaining instalment must equal one-thirteenth part of the residue. The conditions as to residence on first-class land and as to improvements on all classes are as stated above.

(ii.) *Selection of Homestead Areas.* Any person of the age of eighteen years or over who has not previously purchased land in Tasmania may make a selection of a homestead area of first-class land not exceeding fifty acres, at the price of £1 an acre, with one-third added for credit. The selector of a homestead area must pay a cash deposit of twopence an acre at the time of purchase, but need pay nothing further towards the purchase-money until the fourth year, when the repayments for that year and for the fifth year are at the rate of tenpence an acre, and for the remaining fourteen years, during which the credit extends, the annual payment is at the rate of two shillings an acre. The selector must reside on his homestead for a term of five years commencing to run one year after the date of contract, and must effect improvements to the value of £1 an acre before a grant is issued.

(iii.) *Selection in Mining Areas.* A "Mining Area," under the Crown Lands Act, comprises land in the vicinity of a mining field, and which is specially proclaimed a mining area. The land so proclaimed may be selected as first-class agricultural land, not exceeding 100 acres, on the terms provided for the purchase of these lands; but if the land is within one mile of a town the maximum area is twenty acres and the minimum ten acres. Second-class lands within a mining area can be sold at auction, but no lands within a mining area can be sold as third-class. All lands purchased within a mining area are open to any person to search or mine for minerals, gold or other metals; but before any such person can commence searching or mining he must obtain permission in writing from the Secretary for Mines or the nearest Commissioner of Mines. The terms as to payment of purchase-money for mining area selections are the same as in the case of selections of rural lands, mentioned above.

(iv.) *Conditional Sales on Credit.* Both town and rural lands may be sold on credit, either at auction or by private contract, subject to certain conditions. The maximum and minimum area which may be so sold have already been specified. (See above § 5. *Sales by Auction*, 7.) In the case of sales of town lands on credit, the purchaser may not receive a grant until he has effected improvements to the value of a sum equal to the purchase-money. When first-class rural lands (except lands within mining areas) are sold on credit, the purchaser must reside thereon for at least five years, commencing two years after the date of contract, and must effect substantial improvements to the value of £1 an acre before a grant will issue. In the case of the sale of the second and third-class land similar improvement conditions to the value of five shillings and two shillings and sixpence an acre in each class respectively are imposed. A sum equal to one-third of the price is added for credit. The purchaser must pay a deposit of one-fortieth, and the remainder by fourteen annual instalments.

(v.) *Areas Sold Conditionally, 1901 to 1909.* The following table shews the areas alienated absolutely under systems of conditional purchases and sales on credit, the conditions having been fulfilled, and also shews the areas sold conditionally and the applications for conditional purchases received and confirmed, during the year 1901 and from 1905 to 1909, inclusive:—

TASMANIA.—CONDITIONAL PURCHASES, 1901 to 1909.

Particulars.	1901.	1905.	1906.	1907.	1908.	1909.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Completion of Conditional Purchases[1]	23,781	15,926	27,528	36,492	42,362	41,942
Sold Conditionally—						
Free Selections	40,004	161,815	139,433	121,186	120,420	183,237
Homestead Areas	9,108	2,554	1,884	1,148	2,037	971
Auction Sales on Credit	12,961	4,380	1,415	2,571	2,740	4,988
Other Sales (Town Lands)	636	1,384	1,853	2,093	1,632	2,400
Total	62,709	170,133	144,585	126,998	126,829	191,596
Applications—						
Received	1,444	2,848	2,448	1,995	3,225	2,929
Confirmed	768	1,655	1,164	932	1,249	1,501

1. Including selections and sales on credit.

Particulars of total areas alienated and in process of alienation are given below. (See § 11.)

§ 7. Leases and Licenses.

1. **Introduction.**—Leases and licenses are issued in all the States for various terms and upon various conditions. In Victoria, Queensland, and South Australia perpetual leases are issued for an indefinitely long period upon payment of an annual rent, while in all the States leases or licenses of comparatively large areas may be obtained for pastoral purposes. Provisions have also been made in all the States for convenient forms of leases and licenses for various special purposes, and also of special classes of lands. The leases and licenses dealt with below are exclusive of those issued under Closer Settlement and kindred Acts, and also of those issued for mining and auxiliary purposes. (See § 8 and 9 below.)

2. **New South Wales.**—The following are the various types of leases and licenses issued in this State:—(i.) Conditional leases; (ii.) conditional purchase leases; (iii.) settlement leases; (iv.) improvement leases; (v.) annual leases; (vi.) residental leases; (vii.) special leases; (viii.) snow leases; (ix.) pastoral leases; (x.) scrub leases; (xi.) inferior lands leases; (xii.) occupation licenses; and (xiii.) Western lands leases.

(i.) *Conditional Leases.* Conditional leases may be granted to any selector of a conditional purchase, other than a non-residential one, or one whose selection is within a special area in the Eastern Division. In other words, before applying for a conditional lease it is necessary to apply for a residential conditional purchase, in virtue of which such a lease may be held. The provisional deposit with application is, if the amount of rent has been notified prior to the date of application, a sum equal to half a year's rent, and if so notified is at the rate of twopence an acre, but is subject to appraisement by the Local Board. A survey fee in accordance with a fixed scale must also be lodged with the application.

The area of land which may be conditionally leased must not be less than 40 acres, nor more than three times the area of the conditional purchase, and the two together must not amount to more than 1280 acres in the Eastern, or 2560 acres in the Central Division, except in cases where the Land Board has allowed either of these areas to be exceeded by virtue of the power vested in them under the Crown Lands Act 1903 or 1905, as stated above. The lease is for a period of forty years, and this term is divided into four periods of ten years each. The annual rent for each period may, on application by the lessee, or on a reference by the Minister, be separately determined by appraisement in accordance with Section 6 of the Crown Lands Act of 1889. The lessee may at any time during the currency of the lease convert the whole or part into an additional conditional purchase. The total area held under conditional leases on the 30th June, 1909, was 15,480,660 acres, the total rent therefrom being £184,929, as compared with an area of 16,338,676 acres at a rent of £189,602 on the 30th June, 1908.

(ii.) *Conditional Purchase Leases.* This tenure was created by the Crown Lands Amendment Act of 1905, and its chief advantages are that the intending settler can for a small initial outlay by way of deposit, for a moderate rent and under easy conditions, obtain a lease for forty years, together with a right of converting it into a conditional purchase at any time during its currency, and ultimately into a freehold. These leases can only be acquired within areas subdivided and specially set apart by proclamation in the *Government Gazette* for holdings of this class, and an applicant, if a male, must not be under the age of eighteen years, or twenty-one years if a female. No one may apply who already holds any land, other than town or suburban land under the Crown Lands Acts, or land leased from a private individual, or who is either disqualified under the provisions of sec. 40 of the Crown Lands Act of 1895, or is subject to any of the disabilities specified in sec. 14 of the Act of 1905. These sections should be carefully read by intending applicants, as it is impracticable, within the limits of this summary, to fully

explain all the details of the qualification clauses. The deposit, which must be lodged with an application for a conditional purchase lease, is always the half of one year's rent of the land, the rent being calculated at the rate of 2½ per cent. of the capital value of the land. The amounts of the annual rent and of the survey fee required for each block are always stated in the *Gazette*, and on the lithographs issued by the Lands Department shewing the subdivision. Only one-fifth of the survey fee need be lodged with the application, although two or more instalments of one-fifth of the full amount may be deposited, and the balance may be paid subsequently in equal annual instalments, with interest at the rate of 4 per cent. The capital value of the land is fixed by the Minister for the first ten years of the lease, but the lessee may, within six months after confirmation of his application for the lease, apply in the prescribed manner to have such capital value determined by appraisement, and for each succeeding period of ten years the capital value is determined by the Local Land Board on a similar basis.

A condition of ten years' personal continuous residence is attached to holdings of this class, and such residence must, under ordinary circumstances, be commenced within twelve months from the date of confirmation of the application, but the Local Board may, if the circumstances of the case warrant the concession, permit the commencement of residence to be extended to any date within five years of such confirmation, and on such terms and conditions as to improvements and cultivation as may be agreed upon between the Board and the lessee, and the Board may also, on application in the prescribed manner, permit the residence condition to be performed in any adjacent village or town.

The following statement gives particulars of conditional purchase leases applied for and confirmed during the year ended the 30th June, 1909 :—

NEW SOUTH WALES—CONDITIONAL PURCHASE LEASES.

YEAR ENDED 30TH JUNE, 1909.

Applications Received.		Applications Confirmed.			
Number.	Area.	Number.	Area.	Capital Value.	Annual Rent
	Acres.		Acres.	£	£
369	249,360	267	214,079	249,328	6,213

The total area held under conditional purchase leases on the 30th June, 1909, was 534,499 acres, compared with an area of 328,448 acres held on the same date in 1908.

During the years 1908 and 1909 considerable progress was made in clearing land near Narrabri West for settlement under conditional purchase lease. This land is thrown open to settlement in blocks of from 680 to 1600 acres, and in each block 250 acres is ready for the stump-jumping plough, so that a settler is able almost immediately to get some return from the land. Subdivision of the adjoining Pilliga scrub lands in their uncleared state has also taken place, and designs are being prepared for the disposal of from 50,000 to 100,000 acres in the same locality under similar conditions. Since the year 1906 further lands amounting to nearly 69,507 acres, on the Dorrigo, in the north-east of the State, have been subdivided for selection under conditional purchase lease. The aggregate capital value of these lands is £118,020 (giving an average of £1 13s. 11d. per acre), and of the 289 blocks made available 286 or 99 per cent. have been selected.

(iii.) *Settlement Leases.* Under the Lands Act of 1895 provision was made for a convenient form of tenure by way of settlement leases for persons who require a considerable area for agricultural or grazing purposes, or for these purposes combined. The area which might be taken up as a settlement lease was originally limited to 1280 acres for agricultural and to 10,240 acres for grazing purposes, but provision has now been made under which larger areas may be taken as additional settlement leases, in cases where the

Local Land Board is of the opinion that the area sought to be acquired, together with other lands held by the applicant, does not in the aggregate exceed such an area as is sufficient to enable him to maintain his home thereon in average seasons and under ordinary circumstances. The additional holding need not necessarily adjoin the original holding, but must, in the opinion of the Board, be situated within a reasonable working distance thereof. The lease is for a term of forty years, which is divided into four periods of ten years each. The annual rent for the first ten years is fixed by the Minister before the land is made available for lease, and the lessee may, if dissatisfied with the amount, apply to have it determined by appraisement. The rent for each succeeding period of ten years may, on the application of the lessee or on a reference by the Minister, be separately determined in a similar manner. The lessee must make the holding his *bonâ-fide* residence during the whole term of the lease. He must fence the holding within five years, must conform to any regulations made by the Minister for the destruction of vermin, noxious weeds, scrub, etc., and may not assign or sublet his holding without the Minister's consent. Tenant right in improvements is secured to an outgoing lessee, and the lessee may apply at any time after the first five years of the lease for an area not exceeding 1280 acres, not being reserved from sale, on which his house is situated, as a homestead grant. Settlement leases may be converted into original conditional purchases (see 245 *ante*).

The following statement gives particulars of applications for settlement leases received and confirmed during the year ended the 30th June, 1909 :—

NEW SOUTH WALES—SETTLEMENT LEASES.

YEAR ENDED 30TH JUNE, 1909.

Applications Received.		Applications Confirmed.		
Number.	Area.	Number.	Area.	Rent.
278	Acres. 823,208	227	Acres 658,708	£ 7,735

The total area held under settlement leases on the 30th June, 1909, was 6,671,742 acres at an annual rent of £85,602, as against 5,942,867 acres at a rent of £78,512 on the same date in the preceding year.

During the year 1909 certain blocks were opened for settlement lease in the district known as the Mungle Scrub. This district is situated on the commencement of the rise from the great plains of the interior to the Main Dividing Range and from 40 to 65 miles north-east of Moree. In its present state the country is only suited for running a few head of cattle per acre, but when cleared it is considered that fully 75 per cent. of the land will be suitable for agriculture. The settlement of this district under suitable conditions is receiving attention.

(iv.) *Improvement Leases.* Improvement leases may comprise any scrub or inferior land in the Eastern or Central Divisions, and can only be let by auction or tender on the recommendation of the Land Board, or, if not taken up, may be tendered for afterwards at the upset rental. Leases of large areas at moderate rentals can be obtained of lands which are not suitable for settlement until improved, and in the improvement of which it would be necessary to spend large sums before they could be rendered suitable for settlement. The lease is for a term not exceeding twenty-eight years, the rent being payable annually. During the last year of the lease, the lessee may convert into a homestead selection 640 acres not being reserved land, on which his dwelling-house may be erected; he has tenant right in certain improvements, except when such right is stated to be barred. On the 30th June, 1909, an area of 6,676,655 acres was held under improvement leases, the total annual rent amounting to £50,395, or an average of 1⅛ pence per acre.

(v.) *Annual Leases.* These are leases from year to year, renewable by payment of a year's rent in advance before the termination of the current year. The area is restricted to 1920 acres under any one lease, but there is no limit to the number of leases which one individual may hold. The deposit is thirty shillings for each 320 acres or part thereof applied for, and the annual rent is as appraised and notified in the *Gazette*. No conditions as to residence or improvements are attached to these leases, but security of tenure is not guaranteed, and the land may be alienated by conditional purchase or lease, etc. On the 30th June, 1909, there were current 11,010 annual leases for 5,885,768 acres, producing a yearly rental of £40,127.

(vi.) *Residential Leases.* Only lands situated within proclaimed gold or mineral fields are available for holdings of this class. An applicant must be a holder of what is termed a "miner's right," or "mineral license," and must pay a deposit of £1, a provisional rental of one shilling per acre applied for, and the survey fee. The maximum area that may be leased is twenty acres, and the term may not exceed twenty-eight years. The annual rent will be appraised by the Local Land Board, and a condition of perpetual residence is attached to the lease. Within twelve months from the commencement of the lease, fences and buildings of a character suitable for the beneficial occupation of the land must be erected. Tenant right in improvements is conferred upon the lessee. On the 30th June, 1909, there were 867 leases current for 12,640 acres at a rental of £1,450.

(vii.) *Special Leases.* These leases are issued chiefly to meet cases where land is required for some industrial or business purpose, or for such purpose as the Governor, by proclamation in the *Gazette*, may declare, such as the erection of dams, tanks, irrigation works, saw-mills, etc. The area may not exceed 320 acres, except in the case of leases under secs. 89 and 92 of the Act of 1884, for such purposes as wharves, jetties, tramways, and irrigation works, and the term of a special lease may not exceed twenty-eight years. One person may, however, hold more than one special lease. The annual rent, if the land has not been notified for lease in the *Gazette*, is determined after report by the Local Board. Special leases may be obtained either by application, purchase at auction, or by tender. If the lease be sold at auction or let by tender, the rent will be the amount bid at auction, or offered by the successful tenderer, but must not be less than the upset rent. Leases of this kind which have been offered at auction and not sold, or for which tenders have been invited without any being lodged, may be obtained by after-auction tender. In such cases the rent will be the upset rent as notified, and the application will be subject to the approval of the Minister. A special lease may, under the Crown Lands (Amendment) Act 1908, be converted into (*a*) a conditional purchase lease, (*b*) a conditional purchase, (*c*) a homestead selection, (*d*) a settlement lease, or (*e*) a conditional lease. On the 30th June, 1909, there were 4180 leases current comprising an area of 419,469 acres, at a total rent of £25,583, as compared with 354,866 acres at a rent of £23,578 in the preceding year.

(viii.) *Snow Leases.* Lands not held under pastoral or other lease, which may be usually covered with snow for a part of each year, and which are consequently unfit for continuous occupation, may be leased in areas of not less than 1280 acres, nor more than 10,240 acres, and during the currency of such lease the land is exempt from sale or from other lease under the Lands Acts. Such leases are sold by auction or let by tender or by after-auction tender for terms not exceeding seven years, but may be extended for a term of three years by giving twelve months' notice prior to the expiration of the lease. The upset rental is fixed by the Minister after report by the Local Land Board, and the annual rent payable will be the amount bid at auction or tendered. If the lease be applied for after auction or after the time for lodging tenders has expired, the amount will be the notified upset rent. On the 30th June, 1909, there were 23 leases current covering an area of 76,930 acres, at a rental of £458 per annum.

(ix.) *Leases under Section 18, Act of 1903.* The only existing pastoral leases under the Crown Lands Act are situated in the Western district (see para. xiii. hereof). Under

the provisions of the amending Act of 1903, Section 18, leases may, on the recommendation of the Local Land Board, be granted to the registered holder of any pastoral lease, occupation license, or preferential occupation license, for an area not exceeding one-third of the total area comprised within the lease, license, or lease and license, at the date of expiration of the pastoral lease. The term of the lease may not exceed twenty-eight years, and the lease is subject to such rent and conditions as may be determined. At the end of the year 1908-9, there were 150 leases current for 1,142,409 acres at a rental of £10,335 per annum.

(x.) *Scrub Leases.* The Minister has power, on the recommendation of the Local Land Board (*a*) to declare as "Scrub Lands" any Crown lands wholly or partly covered by scrub or noxious undergrowth, and (*b*) to grant leases of such lands on application, or sell the same by auction or tender for a term not exceeding twenty-one years, which term may be extended by the Governor to twenty-eight years. The total area held under scrub leases on the 30th June, 1909, was 2,253,952 acres at a total rent of £8198.

(xi.) *Inferior Land Leases.* The Minister may, after report by the Local Land Board, lease by auction or tender for a period not exceeding twenty years (which term may be extended by the Governor to twenty-eight years) such lands as, in consequence of their inferior character or isolated position, may not have been held under any tenure, or, having been held, have been abandoned. At the close of the financial year 1908-9 there were current twenty-eight leases, covering 106,090 acres, at a rental of £261 per annum.

(xii.) *Occupation Licenses.* There are two forms of occupation licenses, viz., (*a*) preferential, consisting of the areas within expired pastoral leases, and (*b*) ordinary, which relate to the parts of holdings formerly known as resumed areas. Occupation licenses are granted annually by the Minister for Lands at rents determined by the Land Boards, and are terminable at notice. On the 30th June, 1909, there were 1958 permissive occupancies current, embracing about 915,471 acres, the rental being £5911; these figures are exclusive of Lord Howe Island and the Western District, and also of fifty-nine occupancies, aggregating 5247 acres, granted to the Commonwealth Government for rifle ranges.

(xiii.) *Western Lands Leases.* Subject to existing rights and to the extension of tenure to the 30th June, 1943, which might be granted to a lessee on bringing his lease within the provisions of the Western Lands Act 1901 (see § 2, 1, iii., above), all forms of alienation, other than by auction and leases, prescribed by the Crown Lands Act, ceased to operate within this division from the 1st January, 1902. Lands are declared open for lease by notice in the *Government Gazette*, and applications therefor may be made in the prescribed form, accompanied by a deposit of 20 per cent. on the amount of the first year's rent. Within one month from the date of issue of the lease the successful applicant must pay the balance of the first year's rent and execute the lease. The annual rent is determined by the Commissioners for periods not exceeding ten years, and the rent fixed for the first period cannot on reappraisement be either increased or decreased more than 25 per cent. on the first reappraisement, and this provision applies at each subsequent reappraisement to the rent last determined. No rent or license fee may be less than 2s. 6d. per square mile, but it may not be fixed at a higher rate than sevenpence per sheep on the carrying capacity of the land as determined by the Commissioners. The Minister may, on application and after report from the Commissioners, extend over a period not exceeding five years the payment of any money due to the Crown. All lands leased must be fenced within such period and with such class of fencing, not being a rabbit-proof fence, as the Commissioners may determine. Special leases may be granted to discoverers of artesian water.

(xiv.) *Leases and Licenses Current, 1901 to 1909.* On the 30th June, 1909, there were 58,026 leases and licenses current under the Lands Department and the Western Land Board, comprising 128,179,127 acres of Crown lands. Of these leases there were

40,130, comprising 22,452,715 acres, in the Eastern Division; 17,493, comprising 29,465,109 acres, in the Central; and 403, comprising 76,261,303 acres, in the Western Division.

The following table shews the areas held under various descriptions of leases and licenses at the end of the year 1901, and at the end of the financial years 1906, 1907 and 1908, and also the area and rental of leases current on the 30th June, 1909:—

NEW SOUTH WALES.—AREAS OCCUPIED UNDER LEASES AND LICENSES, 1901 TO 1909.

Leases and Licenses.	1901.	1905-6.	1906-7.	1907-8.	1908-9.	
					Area.	Rent.
	Acres.	Acres.	Acres.	Acres.	Acres.	£
Pastoral	44,805,221	3,668,661	3,393,372	1,258,955	1,196,715	863
Outgoing pastoral lessees ...	—	656,340	807,359	1,133,082	1,142,409	10,336
Western land leases ...	—	66,307,201	69,766,491	73,227,685	73,711,644	87,483
Occupation licenses (i.) Ordinary	25,812,215	9,039,134	8,640,653	8,530,311	8,087,161	16,578
Occupation licenses (ii.) Preferential	12,985,651	5,138,896	3,969,825	4,004,925	3,190,085	21,314
Homestead leases	10,953,388	2,616,472	1,650,309	931,910	807,206	2,552
Condit'l. leases—(i.) Gazetted	13,014,055	14,798,801	15,178,016	15,384,176	15,480,660	184,929
(ii.) Not gazetted (under provisional rent) ...	966,887	977,850	17,647	954,500	815,795	6,799
Conditional purchase leases...	—	30,598	187,839	328,448	534,499	17,224
Settlement leases	3,468,675	5,113,847	5,711,520	5,942,867	6,671,742	85,602
Improvement ,, ...	5,551,060	6,275,138	6,527,792	6,550,713	6,676,655	50,935
Annual ,, ...	6,755,942	5,846,127	6,344,890	6,666,862	5,885,768	40,127
Scrub ,, ...	1,535,415	2,029,949	2,030,149	2,127,279	2,253,952	8,198
Snow land ,, ...	79,582	45,812	27,682	70,330	76,930	458
Special ,, ...	124,877	252,525	298,612	354,866	419,469	25,583
Inferior land ,, ...	288,530	247,330	251,579	128,729	106,090	261
Artesian well ,, ...	358,071	378,551	255,692	225,276	102,400	230
Blockholders' ,, ...	—	7	7	1	1	12
Residential leases (on gold and mineral fields)	5,751	9,017	10,211	11,606	12,640	1,450
Church and school lands ...	97,207	51,979	41,611	41,534	29,647	805
Permissive occupancies ...	118,634	604,445	724,361	992,510	915,521	5,921
Prickly pear leases	—	—	68,583	65,082	62,138	1,015
Total under Lands Dept. and Western Land Board	126,921,161	124,088,680	125,904,700	128,931,647	128,179,127	568,675

The total annual rent derived from the leases and licenses issued by the Lands Department and the Western Lands Board amounted to £568,675, or an average of 1,065 pence per acre. Particulars regarding leases and licenses issued by the Mines Department are given in a later part of this section. (See § 9. *Occupation of Crown Lands for Mining Purposes.*)

3. **Victoria.**—The various types of leases and licenses (exclusive of Closer Settlement and Mines Department leases and licenses) under which Crown lands in this State may be issued are as follows:—(i.) Grazing area leases; (ii.) perpetual leases; (iii.) Mallee perpetual leases; (iv.) licenses of auriferous lands; (v.) swamp or reclaimed lands leases; (vi.) grazing licenses and pastoral leases; (vii.) leases and licenses for other than pastoral purposes; and (viii.) State forests and timber reserves licenses.

(i.) *Grazing Area Leases.* These leases may be granted for any term of years expiring not later than the 29th December, 1920. The area leased must not exceed 200, 640, or 1280 acres of first, second, or third-class land respectively, but may comprise two or more grazing areas, provided that the total acreage does not exceed the limit in each class. The annual rent is, according to the valuation and classification, not less than threepence an acre for first-class, twopence an acre for second, and one penny an acre for third-class land, payable half-yearly in advance. The lessee must fence the land within three years, or he may, if he prove to the Board that such fence is impracticable, or is not

required, expend on permanent improvements a sum equal to the cost of fencing. The written consent of the Board must be obtained before the lessee can assign, sublet, or divide his land, and before he can use growing timber for other purposes than for erecting fences and buildings on the land. The lessee must destroy all vermin, keep down the growth of all noxious weeds, and keep all improvements in good repair. He is also required to erect swing gates in places where there is a fence across any track required by any other pastoral lessee, or by the public. The right is reserved to the Crown to take at any time any portion of the area which may be required for railways or other public purposes, and to issue licenses to enter on the land for the purpose of obtaining timber, coal, stone, etc. The Crown also has a right to resume possession, after having given two years' notice in writing, upon payment to the lessee for his interest in such lease, together with the value of houses, fences, wells, reservoirs, tanks, dams, and all permanent improvements constructed by the lessee prior to such notice and during the currency of his lease. An outgoing lessee is entitled to payment from an incoming tenant for all fences, wells, reservoirs, tanks and dams constructed during the currency of his lease, but the sum to be paid in respect of such improvements must in no case exceed ten shillings, seven shillings and sixpence, or five shillings an acre for first, second, or third-class land respectively.

The lessee may select an agricultural or grazing allotment out of the land leased in the manner indicated above. (See § 6, 3 iii.)

(ii.) *Perpetual Leases.* Perpetual leases of any Crown lands available as agricultural or grazing lands, swamp or reclaimed lands, and Mallee lands may be granted to any person who is entitled to take up an agricultural or grazing allotment license in similar areas according to the classification of the land, but no person may hold under perpetual lease directly, or by transfer or otherwise, more than three times the areas that may be selected from the Crown. The lessee must destroy all vermin within two years, and must within six years from the date of issue of the lease enclose his land with a fence and keep the same in repair, or, if proved to the satisfaction of the Board that the erection of such fence is impracticable or not necessary, may expend on permanent improvements a sum equal to the cost of fencing. The lessee must reside on the land, or within five miles thereof (except in the case of swamp or reclaimed lands), for at least six months during the first year of his term, and for at least eight months during each of the following four years; but this covenant as to residence does not operate in the event of the cultivation by the lessee of at least one-fourth of his allotment within the first two years of his lease, and at least one-half thereof before the end of the fourth year. Permanent improvements must be made to the value of ten shillings an acre for first-class land, seven shillings and sixpence an acre for second-class land, and five shillings an acre for third-class land, before the end of the third year, and further improvements to the same values before the end of the sixth year of the lease. The lessee may not transfer, assign, mortgage, sublet, or part with the possession of the whole or any part of his allotment within the first six years of his lease, but at the end of that period, if no rent be owing and all conditions have been fulfilled, the lessee may, with the written consent of the Board, transfer, mortgage, sublet, or part with the land. The Crown reserves the right to resume any part of the lands demised, required for public or mining purposes, on payment to the lessee of the cost of moving and re-erecting his improvements and the loss sustained in relinquishing improvements not removable.

The rent payable by every perpetual lessee (other than for mallee and swamp or reclaimed lands, which is specially dealt with under the respective headings) is 4 per cent. on the unimproved value of the land, which is deemed to be twenty shillings an acre for first-class, fifteen shillings an acre for second-class, ten shillings an acre for third-class land until 29th December, 1909. For every successive period of ten years the unimproved value will be fixed by the Board, and the rent will be 4 per cent. of such value. The rent must be paid yearly in advance. Any lessee whose rent is not in arrears may surrender

his lease by making written application to the Board within six months of any successive period of ten years, after the 29th December, 1909, and if the Board is satisfied that the applicant holds the allotment *bonâ-fide* for his sole use and benefit, he may obtain a residential or non-residential agricultural or grazing allotment license. (See § 6, 3 i.) The value of all permanent improvements will be credited to the licensee.

(iii.) *Mallee Perpetual Leases.* Perpetual leases of mallee land may be granted to any person who is entitled to select under agricultural license in similar areas according to the classification of the land. The rent payable is 1¼ per cent. per annum on the estimated unimproved value of the land reviewed every ten years, and is payable annually in advance. The lessee must fence the land within six years, take up his residence on the land within six months after the grant of the lease, and continue to reside on or within five miles thereof for at least six months during the first year of his lease, and for at least eight months during each of the four following years. If, however, at least one-fourth of the allotment be cultivated within the first four years, and at least one-half before the end of the sixth year, or the allotment improved to the extent of ten shillings, seven shillings and sixpence, or five shillings per acre for first, second, or third-class lands respectively, the condition as to residence will not be enforced. The lessee must not cut or remove any live pine, box, or gum trees, and must protect all belts or clumps of such trees from fire. The perpetual lease conditions (previously explained) apply except that a perpetual lessee who so selects out of a Mallee allotment lease is entitled to transfer or mortgage within the first six years, and a Mallee perpetual lessee may *at any time* surrender and obtain a Mallee agricultural license (see above, § 6, 3 iii.), or if the necessary conditions required under license have already been fulfilled, including improvements and residence, a Mallee agricultural lease may be issued.

(iv.) *Licenses of Auriferous Lands.* The "auriferous lands" are distributed over various parts of the State. Annual licenses are issued for areas not exceeding twenty acres, entitling the holders to reside on or cultivate the area upon payment of a license fee of five shillings for areas of three acres or under, ten shillings for areas from three to ten acres, and one shilling per acre for areas over ten acres. Not more than one such license may be granted to or held by any one and the same person. The licensee is required to reside on the land during the continuance of the license, or to fence the land within four months from the date of issue of the license, and cultivate one-fifth of the area, allowance being made for any portion occupied by buildings; he cannot assign or sublet without permission. Notices must be posted on the land indicating that it is auriferous, and subject to Mining conditions. If the area can be separated from the auriferous land with the consent of the Minister of Mines, and has been improved to the value of £1 an acre, and if, in the opinion of the Board, the occupation is *bonâ-fide*, the licensee may surrender his annual license and obtain in lieu thereof a license for an agricultural or grazing allotment (see above, § 6, 3 i. and ii.), which will enable the freehold to be obtained. All rents paid and improvements effected may be credited, and the license will be antedated if the residence condition has been complied with.

(v.) *Swamp or Reclaimed Lands.* Swamp or reclaimed lands comprise the areas so classed under the Land Act 1901, and such other areas as may from time to time be drained or reclaimed, and proclaimed as swamp or reclaimed lands in the *Government Gazette*. The Governor in Council is empowered to cause any swamp lands to be drained and reclaimed by prison or other labour, and the Board and other persons authorised by them may enter upon any lands whatsoever for the purpose of making surveys and taking levels, and may also appropriate such parts of any lands as may be necessary for the construction of any canals or drainage works, provided that full satisfaction be made under the Lands Compensation Act 1890 to the owner or occupier of such lands for all damage sustained through the exercise of such powers.

These swamp or reclaimed lands are divided into allotments not exceeding 160 acres, and the value of each allotment is provisionally determined by a Land Classification Board; an allotment may be leased either for a term of twenty-one years, or under a perpetual lease, or under a conditional purchase lease (see § 6, 3 iv.), or may be disposed of by public auction (see § 5, 3). Every lease for twenty-one years, every perpetual lease, every conditional purchase lease, and every contract for sale of an allotment of swamp or reclaimed lands, must *inter alia* contain (*a*) a condition that the lessee or purchaser will keep open all canals, ditches, and drainage works on the land and adjacent to the land; and also (*b*) a condition that the lessee or purchaser will make permanent improvements on the land to the extent of ten shillings an acre in each of the three first years, unless the Minister is of opinion that such expenditure would not be advantageous or profitable, in which case the condition may be omitted or modified. The rent payable by the perpetual lessee of any swamp or reclaimed land is at the rate of 4 per cent. per annum on the value of the land, as fixed by the Classification Board and reassessed every ten years after the 29th December, 1909, not including any improvements which do not belong to the Crown. Conditional purchase leases are issued for a period of 31½ years, providing for the payment of the value of the allotment together with interest thereon at 4½ per cent. per annum, which, calculated over the whole term, is £3 half-yearly for every £100, and in sixty-three instalments pays off the purchase-money and interest. Residence is not necessary. Stringent conditions are imposed preventing assignment during the first six years. At any time after the expiration of six years from date of lease, if all conditions have been complied with, assignment is allowed on obtaining consent, and on payment of the balance of purchase-money at the end of any half-year, less interest for the unexpired term, the Crown grant may be obtained.

(vi.) *Grazing Licenses and Pastoral Leases.* Large areas of pastoral lands still remain in Victoria, chiefly in the north-eastern districts, but a considerable proportion of these areas, being mountainous, is difficult of access, and will be only made available for selection as the advancement of settlement demands. Provision is made in the Land Act for pastoral leases for a period of years, which expired on 29th December, 1909. These leases gave the right to select thereout a homestead of 200, 300, or 640 acres. Only a few such leases were issued, and no others are to be issued in the future. Pastoral lands are now occupied under annual grazing licenses.

Annual grazing licenses are also issued for lands set apart as reserves, and Crown lands, not required for other purposes. There is no limit to the area which may be so held, the rental charged varying according to the grazing value. Licenses may be renewed annually for any term not exceeding seven years, with the right to fence and make dams, but are subject to cancellation at any time if the land be required for other purposes.

(vii.) *Leases and Licenses for other than Pastoral or Agricultural Purposes.* Leases are granted of any Crown lands not exceeding (except in the case of leases for guano or other manure) three acres, for a term of not more than twenty-one years, and at an annual rent of not less than £5. These leases are granted for various purposes, such as—For obtaining guano, stone or earth; for sites of inns, stores, bridges, ferries, factories, quays, or landing places; for the working of mineral springs, and for the manufacture of salt. If the lessee fail to use the land *bonâ-fide* for the purpose for which he leased it, the lease may be cancelled at any time. Leases are also granted to persons who are willing to construct canals, docks, roads or tramways. Annual licenses are issued for any of the purposes for which leases are granted as above. If the licensee of a site for a butter factory or creamery, or for a residence, garden, inn, store, smithy, or similar building not within the boundaries of a city, has been in possession for five years and has constructed improvements on the land, provided that there are no objections to the alienation of the land on the ground of being auriferous or other reasons of a public nature, he may purchase the allotment at an appraised price and receive credit for all rent paid. No such licensee can purchase more than one site. Similar holdings under miner's right for

areas not exceeding one acre may be purchased under Sec. 36, Mines Act 1890, after two and a half years' possession.

Annual licenses may be granted at a rental of one shilling an acre for the purpose of a bee farm upon any Crown lands or upon any lands held under a pastoral or grazing lease or under an annual grazing license. No person may hold more than three bee-farm licenses, nor more than a total area of ten acres, and the holder of a grazing area or pastoral lease or of a grazing license may not keep more than ten hives of bees on his holding unless he is also the holder of a bee-farm license. The licenses may be renewable annually for seven years and cannot be sublet or transferred without consent. A bee-farm licensee may, at his own risk, erect buildings, fences, and improvements, but must remove same at any time if directed. No dog may be kept or allowed to remain on a bee-farm site. Any unalienated Crown lands may be proclaimed as available for being licensed for the purpose of being used for bee-range areas. Annual licenses are granted of areas, to be used as bee-range areas, at a rent of not less than one halfpenny for every acre within one mile of the site of the apiary as specified in the license.

(viii.) *State Forests and Timber Reserves Licenses.* Grazing licenses, residence licenses, and licenses to cut timber are issued for lands situated within State forests and timber reserves, which are now controlled by the Forest Branch of the Department of Mines under the Forests Act 1907.

(ix.) *Areas held under Leases and Licenses, 1901 to 1909.* The following statement shews the areas of Crown lands occupied under leases and licenses at the end of the year 1901, and from 1905 to 1909 inclusive:—

VICTORIA.—OCCUPATION OF CROWN LANDS UNDER LEASE OR LICENSE, 1901 to 1909.

Tenure.	Area in Acres.					
	1901.	1905.	1906.	1907.	1908.	1909.
Pastoral Lease	39,450	52,150	64,150	59,510	63,510	51,450
Grazing Area Lease	2,338,649	3,631,974	3,533,792	3,402,536	3,183,800	3,087,173
Grazing Licenses—						
Land Acts 1890-91	5,908,985	—	—	—	—	—
Land Acts 1901 (exclus. of Mallee)	—	7,481,535	5,820,997	5,833,488	6,469,855	6,774,794
Mallee Lands	—	4,272,652	4,897,943	5,217,846	4,467,218	4,970,042
Auriferous Lands (Licenses)... ...	377,427	99,774	101,163	104,555	106,040	103,996
Swamp Lands (Leases)	4,200	4,369	4,450	4,513	4,566	4,500
Perpetual Leases	8,137	28,944	29,267	33,319	31,952	32,354
Mallee Pastoral Leases ...	7,980,592	—	—	—	—	—
Mallee Allotment Leases ...		1,934,246	1,731,217	1,305,914	987,186	718,249
Perpetual Leases under Mallee Lands Acts 1896-1901	448,842	431,214	501,013	604,236	641,219	641,837
Wattles Act 1890	4,427	1,980	—	—	—	—
Total	17,110,709	17,938,838	16,683,992	16,565,917	15,955,346	16,384,395

4. **Queensland.**—In this State Crown lands may be occupied under the following types of leases and licenses:—(i.) Grazing farms; (ii.) grazing homesteads; (iii.) scrub selections; (iv.) occupation licenses; (v.) special leases; (vi.) perpetual lease selections; and (vii.) pastoral leases. General conditions as to applications for selections have been mentioned above. (See § 6, 4.)

(i.) *Grazing Farms.* Areas of land already surveyed are available for selection as grazing farms over a great extent of territory. The greatest area which may be applied for under any circumstances is 60,000 acres, but each proclamation opening land for grazing selection declares the maximum area which may be selected in the area to which it applies. In the event of lands open under different proclamations, and of a total area

exceeding 20,000 acres, being applied for by the same person, a rental limitation of £200 per annum must be observed. Thus, of lands open at twopence per acre, the maximum area obtainable would be 24,000 acres; at three halfpence per acre, 32,000 acres, and so on. The term may be fourteen, twenty-one, or twenty-eight years, as the opening proclamation may declare. The annual rent of the first period of seven years may range from one halfpenny an acre upwards, and may be proclaimed or tendered. Under the amending Act of 1909, the rent payable for a grazing selection during the first seven years may be either nominal or such as will encourage the selector to destroy certain specified noxious weeds or plants. The rent for each subsequent period of seven years will be determined by the Land Court.

A grazing farm must be continuously occupied by the selector residing personally on it, or by his manager or agent doing so. Within three years of the issue of the license to occupy, the selector must enclose the land with a substantial fence, and must keep it so fenced during the whole of the term. Within a period (not exceeding seven years) to be fixed by proclamation, the selector must eradicate specified noxious weeds. In the case of two or more contiguous farms, not exceeding in the aggregate 20,000 acres, the Court may permit the selectors to fence only the outside boundaries of the whole area. If so declared by proclamation, the enclosing fence must be of such a character as to prevent the passage of rabbits.

The applicant for a grazing farm must first obtain an occupation license, and as soon as the land is fenced in the manner prescribed, the selector becomes entitled to a lease of it, and may thereafter mortgage it; or with the permission of the Minister may subdivide or transfer it; or with the consent of the Land Court, may underlet it. The cost of survey—of which one-fifth must be paid when application is made—ranges from about £30 for a farm of 2560 acres to about £65 for 20,000 acres.

Particulars of grazing farms are given in paragraph (iii.) hereinafter.

(ii.) *Grazing Homesteads.* Lands available as grazing farms are also available for selection as grazing homesteads at the same rental and for the same term of lease. Under the amending Act of 1909, land opened for grazing selection is available at first for homesteads only, and can only become available as grazing farms if it remains unselected as homesteads for four weeks. The conditions and provisions stated above in respect of grazing farms are applicable also to grazing homesteads, with the following two exceptions:—(*a*) During the first five years of the term of a grazing homestead the conditions of occupation must be performed by the continuous personal residence of the selector on the land. (*b*) Before the expiration of five years from the commencement of the term, or the death of the original lessee, whichever first happens, a grazing homestead is not capable of being assigned or transferred. Unless with the special permission of the Minister, a grazing homestead may not be mortgaged.

Particulars of grazing homesteads are given in paragraph (iii.) hereinafter.

(iii.) *Scrub Selections.* Lands which are entirely or extensively overgrown with scrub are available for selection in different classes according to the proportion of the land covered with scrub. The area selected must not exceed 10,000 acres, and the term of the lease is thirty years, the rent ranging from a peppercorn an acre in the first five years, one halfpenny an acre for the next succeeding ten years, and one penny an acre for the remaining fifteen years in respect of lands in the first class; to a peppercorn for the first twenty years, and one penny an acre for the remaining ten years in respect of those in the fourth class. During the first period in which the selector pays a peppercorn rent he must clear the whole of the scrub in equal proportions each year, and must keep it cleared, and must enclose the selection with a good and substantial fence. A negotiable lease is issued to the selector when his application is approved.

The following table shews the number of grazing farms, grazing homesteads, and scrub selections, for which applications were accepted during each year from 1901 to 1909:—

QUEENSLAND.—GRAZING FARMS, HOMESTEAD AND SCRUB SELECTIONS, 1901 to 1909.

Year.	Grazing Farms.		Grazing Homesteads		Scrub Selections.		Total.	
	No.	Area.	No.	Area.	No.	Area.	No.	Area.
		Acres.		Acres.		Acres.		Acres.
1901 ...	247	1,371,283	47	290,785	19	48,450	313	1,710,518
1902 ...	245	1,410,364	38	171,104	10	51,058	293	1,632,526
1903 ...	106	709,183	25	123,026	6	5,423	137	837,632
1904 ...	150	1,244,072	21	176,435	1	200	172	1,420,707
1905 ...	210	1,738,882	23	120,982	7	31,457	240	1,891,321
1906 ...	262	2,067,275	56	404,499	3	9,562	321	2,481,336
1907 ...	374	3,028,696	54	315,444	8	58,954	436	3,403,094
1908 ...	314	2,459,653	91	870,325	4	16,401	409	3,346,379
1909 ...	304	3,114,593	116	1,509,210	2	8,489	422	4,632,292

The average rent in 1909 was 1d. per acre for grazing farms and $2\frac{5}{16}$d. per acre for grazing homesteads.

Particulars of total areas held under leases and licenses are given in a later part of this section. (See § 11.)

(iv.) *Occupation Licenses.* Annual licenses are granted to occupy Crown lands which have been declared open for such occupation by notification in the *Gazette*. The rent is as specified by the notification or as bid by the licensee, but the Minister may by notice before the 1st September in any year increase the rent by an amount not exceeding 25 per cent. The licensee is entitled to compensation for improvements effected of which the Land Court has approved. The total number of licenses in force at the end of the year 1909 was 1727, comprising an area of 59,472 square miles, the total rent being £28,338. Particulars of the area held under license for previous years are given in a later part of this section. (See § 11.)

(v.) *Special Leases.* Leases of any land not exceeding 250 acres in area may be issued for the erection of wharves, store-houses, ship-building yards, baths, waterworks, gas or electricity works, or for any manufacturing, industrial, residential, or business purposes, for a term not exceeding thirty years, and upon conditions to be determined by the Governor-in-Council. Leases for a similar term may be issued for any country lands reserved for public purposes and which are infested with noxious weeds, on the conditions that steps are taken to destroy such weeds and that the land is held so that it may be used for the public purpose for which it was reserved without undue obstruction.

During the year 1909 there were 89 leases for special purposes granted, comprising an area of 2595 acres, the total annual rent being £473, and there were extant at the end of the year 413 such leases, reserving rents amounting to £2361 per annum. In addition, 35 leases of reserves, aggregating 11,993 acres, were granted at rentals amounting to £152 per annum; the total number of these leases of reserves in force at the end of the year being 72, reserving rents amounting to £265. Particulars of special leases are given for previous years in a later part of this section. (See § 11.)

(vi.) *Perpetual Lease Selections.* This form of tenure was introduced by the Lands Act Amendment Act 1908. Land proclaimed to be open for agricultural farm selection (see § 6, 4, above) may also be opened for perpetual lease selection, and the latter mode may be conceded priority of application over the former. The rent for the first period of

ten years of the lease is 1½ per cent. on the proclaimed purchasing price of the land for agricultural farm selection. The rent for each succeeding period of ten years is determined by the Land Court. The same conditions of occupation and improvement as are prescribed for agricultural farms are attached to perpetual lease selections, and, except as specially prescribed, the provisions relating to agricultural farms apply to them also. As the name implies, the selections are leases in perpetuity, and are not capable of being converted to freeholds.

(vii.) *Special Licenses.* Licenses to cut timber or to dig for any stone, gravel, earth, shells, or guano, may be issued. The prescribed fees and a royalty must be paid.

(viii.) *Pastoral Leases.* By far the greater number of pastoral leases are now held under the Land Act 1897 in conjunction with the Act of 1902. Under the former Act existing lessees could surrender their leases and obtain new leases for one part of the areas surrendered for terms ranging from ten to forty-two years. The other part called "the resumed part" was deemed to be Crown lands subject to the lessee's right of depasturing. Under the Amendment Act of 1909, the right of depasturing on the resumed part is terminable at any time by six months' notice. Previously, so long as the rent was paid, a right of depasturing was only terminable in respect of such parts of the area as might be selected or otherwise disposed of under the selection or sale provisions of the Land Act. Another important provision of the Amending Act as affecting pastoral holdings (as well as other leases) is contained in Section 27. It empowers the Minister to require a lessee to entirely eradicate prickly pear growing on his holding within such time, not exceeding ten years, as the Land Court may allow, and permits the lessee with the approval of the Minister to surrender one-fourth of the holding. The Amending Act of 1909 repealed eleven Pastoral Land Acts which had become practically inoperative; all rights and obligations existing under these Acts are preserved.

The following table shews the total areas of pastoral leases (including resumed parts) occupied under the various Acts at the end of the year 1901 and from 1905 to 1909, inclusive:—

QUEENSLAND.—PASTORAL LEASES OCCUPIED UNDER VARIOUS ACTS, 1901 to 1909.

Particulars.	Area in Square Miles.					
	1901.	1905.	1906.	1907.	1908.	1909.
Pastoral Leases Act 1869	39,307	11,423	5,494	3,524	1,513	1,379
Crown Lands Act 1884	243,586	65,993	37,626	31,802	26,842	18,733
Land Act 1897	15,046	10,680	4,653	3,686	3,686	1,307
Pastoral Leases Act 1900	50,076	31,590	27,249	27,130	24,061	24,061
Pastoral Holdings New Leases Act 1901...	—	108	129	339	349	347
Land Act 1902	—	161,022	209,824	235,597	258,975	280,960
Total	348,015	280,816	284,975	302,078	315,426	326,787

The gross area held at the end of the year 1909 for purely pastoral purposes (under *Occupation Licenses and Pastoral Leases*) was 386,259 square miles, at rentals aggregating £311,334 per annum. The area was 8272 square miles greater than that for the previous year, and the rental was £11,749 greater. The average rent was 16s. 1½d. per square mile, as against 15s. 8¾d. for the previous year.

5. **South Australia.**—The following are the various types of leases and licenses which are issued in this State:—(i.) Perpetual leases; (ii.) miscellaneous leases; (iii.) grazing and cultivation leases; (iv.) reclaimed swamp leases; (v.) licenses for special purposes; (vi.) leases under the Pastoral Act 1904; and (vii.) leases with right of pur-

chase. General information regarding applications for leases and agreements has been given above. (See § 6, 5.) Leases of lands in the Northern Territory are dealt with in the next succeeding part of this sub-section.

(i.) *Perpetual Leases.* Any Crown lands which have been surveyed, or the boundaries thereof delineated on the public maps, are available for perpetual lease. The area and rent are determined by the Commissioner on the recommendation of the Land Board, and applications therefor must be accompanied by a deposit of 20 per cent. of the first year's rent, as notified in the *Gazette*. The lessee is required to execute and deliver the lease within twenty-eight days, and to pay the balance of the first year's rent and the prescribed fees within the same period. The land is vested in the lessee in perpetuity, and the rent is determined by the Board for each term of fourteen years, at least twelve months before the expiration of such period of fourteen years. If the lessee does not accept a revaluation of the rent within six months his lease determines at the then current period of fourteen years of his lease. All perpetual leases not subject to revaluation of rent are liable to the land tax, and the rent originally reserved is payable during the whole of the term. In respect of any land which, on account of deficiency of rainfall, is only suitable for pastoral purposes, the rent of such land is fixed at pastoral rates. The Crown reserves the right to resume any part of the land for the purposes of roads, tramways, railways, mining, etc., on making reasonable compensation to the lessee, and there is also in all leases a reservation to the Crown of all minerals, precious stones, coal, and mineral oils. The lessee may, after six years, with the consent of the Commissioner, sublet the whole or any part of his holding for a period not exceeding three years.

(ii.) *Miscellaneous Leases.* Leases of Crown lands, not exceeding 640 acres in extent, may be granted on such terms and conditions as the Governor may think fit to any *bonâ-fide* discoverer of any guano or other valuable substance or deposit (not including minerals).

The Governor has power to resume possession of any well or place where water has been found, and also of not more than one square mile of land contiguous thereto. If the water so found is artesian the area resumed may be increased to five square miles. The Governor may offer a lease of such land resumed by private contract or public auction.

Leases may also be granted by sale by auction for a term not exceeding twenty-one years of any Government buildings not required for Government purposes or of any Crown lands, for a variety of purposes, such as—for obtaining guano, stone, clay, or earth; for sites for inns, stores, factories, wharves, or for any other purpose approved by the Commissioner. Leases of lands comprised within any forest reserve may also be granted for any term not exceeding forty-two years.

(iii.) *Grazing and Cultivation Leases.* Every miscellaneous lease under any of the Crown Lands Acts for grazing and cultivation purposes, or grazing purposes only, is held to have been lawfully granted, and the power of resumption, if required for any purpose of public utility, is reserved to the Crown. Any lessee under any such miscellaneous lease may, with the consent of the Commissioner, cultivate the whole of the land without rendering the lease liable to forfeiture, provided that no trees be injured or timber be cut down or destroyed without the consent of the Commissioner.

(iv.) *Reclaimed Swamp Lands.* These are subdivided and offered on perpetual lease in the same manner as other lands are offered. The rent may not be less than 4 per cent. per annum on the cost of reclaiming and the unimproved value of the land. During the first year only one-quarter of the annual rent need be paid, one-half during the second year, three-quarters during the third year; afterwards the whole annual rent must be paid yearly. No person may hold more than two blocks of reclaimed lands. Any of these lands remaining unallotted for a year may be let at reduced rental, or on miscellaneous lease. (See also § 8, 6 iii. hereinafter.)

(v.) *Special Licenses.* Licenses to remove timber, stone, guano, manure, shell or seaweed from Crown lands, and for fishermen's residences and drying grounds, for manufactures, slaughter-houses or saw mills, for depasturing stock, or other approved purposes for any term not exceeding a year, may be granted by the Commissioner or any person authorised by him on payment of a fee as fixed by regulation.

(vi.) *Leases under the Pastoral Act 1904.* This Act deals with Crown lands which do not come within the scope of the Lands Acts. The Act is administered, under the Commissioner of Crown Lands, by a Board consisting of three members appointed by the Governor. The duties of the Board are to decide upon the area, rent, and term of lease of land, and to allot the same. In fixing the size of the blocks allotted regard is paid to natural features, so as to allocate improvements and water to each block as equally as possible. The amount to be paid for any improvement is fixed, distinguishing between amounts payable to the Crown and to the outgoing lessee.

(*a*) *General Provisions.* Notice of land available is published in the *Gazette*, shewing the area, situation, term of rent of each block, price to be paid for improvements, and the cost of valuing such improvements. Any land not applied for within a month of the date of the notice may be reoffered at a reduced price, and so on at intervals of three months until applied for. Each application must be accompanied by a quarter of a year's rent and 5 per cent. of the price payable for improvements, or 10 per cent. if the improvements do not belong to the Crown. The successful applicant must pay the balance of the first year's rent and the lease fee within one month after allotment. A lease does not entitle the holder to mining rights, or to remove timber, but only to use the surface of the land for pastoral purposes, or for other purposes approved by the Commissioner. The cost at the nearest port or railway station of barbed wire and netting required for vermin-proof boundary fences may be advanced to the lessee by the Commissioner in certain cases, upon the recommendation of the Board, after wire and netting to the amount of such cost have been utilised in vermin-proofing boundary fences. These advances bear interest at 4½ per cent. per annum, principal and interest being repaid in twenty equal annual instalments of £7 13s. 9d. for every £100 advanced. Leases may be granted to charitable incorporated bodies for any term not over twenty-one years, at such rent and terms as the Governor may think fit, of land for aboriginal reserves, in blocks not exceeding 1000 square miles, with right of renewal so long as the land is used for the aboriginals.

(*b*) *Terms and Conditions.* The term of the lease is forty-two years, unless the land is likely to be required for closer settlement, when the term is twenty-one years; forty-two-year leases are subject to revaluation of rent for the latter twenty-one years. In determining the rent the Board must in all cases have regard to the land's carrying capacity for stock, its value for other purposes, its proximity and facility of approach to railways, ports, rivers, or markets. Within twelve months of the expiry of a lease all improvements on the land must be valued, and their position indicated on a plan. Unless already improved up to £3, every lessee is required to expend in improvements on the land a sum fixed by the Board, not exceeding ten shillings per mile per annum, until at least £3 per mile has been so expended. Payment for improvements belonging to the Crown may be made by annual instalments, extending if desired over forty-two years, the lessee meanwhile keeping such improvements in repair. Improvements must consist of wells, tanks, dams of a permanent character, machinery, and appliances for raising water, vermin-proof or other fences, huts or sheds erected for residence or shearing or other purposes required in connection with live stock. The lessee must stock his holding in the proportion of five head of sheep or one head of cattle for every square mile within three years, and within seven

years in the proportion of twenty head of sheep or four head of cattle for every square mile. The average annual rental of pastoral lands is about three shillings and twopence per square mile.

(c) *Resumption and Free Leases of Pastoral Lands.* Any run may be resumed for public works, sites for a town or cemetery, for mining, or for park lands, on a month's notice; or for intense culture, after the first ten years of the term, after a year's notice. The lessee is entitled to compensation for land resumed from his run, or for loss or depreciation in value of his lease caused by such resumption, and for improvements. The Commissioner or any person authorised by him, may enter on any run to sink bores or wells, or to construct dams or other water conservation works, outside of one mile from any improvements consisting of well, dam, or building worth £100. If water is so discovered, an area of one square mile may be resumed, and a lease thereof granted to the discoverer. Where artesian water is discovered, five square miles may be resumed. If a lessee discover artesian water on his run, at least ten miles from any other artesian supply on his run, which yields not less than 5000 gallons per day of water suitable for stock, he is entitled to 100 square miles of land surrounding the well, rent free for ten years, for each well so discovered up to four.

Very little pastoral country was applied for or allotted during 1909, although 15,439 square miles at low rentals, once stocked, have been open to application for some years. In addition there is available about 148,000 square miles of unoccupied country. The reason for so little of this land being applied for is partially due to the large increase of wild dogs and the impossibility of keeping sheep without expensive fences, the absence of permanent water, and the distance from market. The area of land held under pastoral leases is 130,218 square miles, at an annual rent of £24,505 and yearly instalments of purchase-money for improvements £12,835 ; also 11,169 square miles are held on annual permits at a rental of £1004.

(vii.) *Leases with Right of Purchase.* Under the Crown Lands Act of 1888, now repealed by the Crown Lands Act 1903, and the Pastoral Act 1904, leases were granted with a right of purchase for a term of twenty-one years, containing a right of renewal for a further term of twenty-one years and a right of purchase, exercisable at any time after the first six years at a price of not less than five shillings an acre. The renewed leases are now governed by Part V. Division V. of the Act of 1903. The rent for the term of any renewed lease with a right of purchase is fixed by the Board by revaluation at least twelve months before the expiration of the original lease, and the renewed lease contains a right of purchase exercisable at any time during the term of the renewed lease. In fixing the purchase-money and rent for a renewed lease the Board, in cases of revaluation, does not consider the value of the improvements made.

(viii.) *Area held under Lease, 1901 to 1909.* The following table shews the area held under leases and licenses at the end of the year 1901, and from 1905 to 1909 :—

SOUTH AUSTRALIA (Proper).—AREA UNDER LEASES AND LICENSES, 1901 to 1909.

Particulars.	1901.	1905.	1906.	1907.	1908.	1909.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Right of Purchase Leases	5,639,519	4,898,422	4,724,954	4,579,418	4,424,814	4,232,009
Perpetual Leases	7,115,782	10,573,154	11,445,372	12,568,576	13,269,290	14,088,223
Pastoral Leases	68,916,125	76,402,950	76,685,510	79,388,240	83,009,650	87,038,450
Other Leases	3,905,729	2,273,383	2,113,718	1,985,866	1,812,959	1,513,032
Total held under Lease	85,577,155	94,147,909	94,969,554	98,522,100	102,516,713	106,871,714

6. **Northern Territory.**—In the Northern Territory the freehold of the land may only be acquired either by purchase at auction or by private agreement (see § 5, 5 (iii.) above) or by first taking a lease with right of purchase. The various types of leases and licenses issued are as follows:—(i.) Agricultural leases; (ii.) pastoral leases; (iii.) special leases; (iv.) leases with right of purchase; (v.) perpetual leases; (vi.) tropical products leases; (vii.) leases for horsebreeding stations; and (viii.) licenses.

(i.) *Agricultural Leases.* Leases may be granted for a term of five years at an annual rent of sixpence an acre for blocks, not exceeding 640 acres, of any lands north of 17° Lat. S. for the production of rice, sugar, coffee, tea, indigo, tobacco, cotton, or of any other agricultural product which may be allowed by the regulations. Leases for blocks not exceeding 160 acres may be granted, on residential conditions, at a rent of threepence an acre. The lessee must fence his holding during the term of the lease; within two years from the date of the lease he must cultivate at least one-tenth of the land, and during the third and every subsequent year must cultivate at least one-twentieth additional part of the area.

(ii.) *Pastoral Leases.* Leases for pastoral purposes are regulated by the Pastoral Act of 1899, which provides that leases may be granted for a term of forty-two years at an annual rental of sixpence per mile for the first seven years, not less than one shilling per mile for the second period of seven years, and two shillings for the third period of seven years; the rent for the remainder of the term is fixed by valuation. It is also provided that land which has been once leased for pastoral purposes may not be leased again for the same purposes unless a lease thereof has been offered for sale by auction at an upset yearly rent of sixpence per square mile. The lessee must stock the land before the end of the third year with five head of sheep or one head of cattle per square mile, and before the end of the seventh year must increase the stock to ten sheep or two head of cattle per square mile. The land may be resumed for public purposes upon three months' notice, or for other purposes upon two years' notice. Since the year 1902, long leases for pastoral purposes have not been granted. Land has been let only on annual permits; if the holder of a permit can shew that he is making good use of the land, and if no application has been made for it for agricultural purposes, the permit is extended.

(iii.) *Special Leases.* Discoverers' leases may be granted, on such terms as the Minister may think fit, for areas not exceeding 640 acres for coal, petroleum, guano, or other valuable substance (excluding minerals). Special leases may be sold at auction for the purpose of obtaining clay and stone as sites for stores, inns, wharves, factories, etc.

(iv.) *Leases with Right of Purchase.* These leases are granted for classified surveyed country lands, situated north of the 17th parallel, for twenty-one years with a right of renewal for a further period of twenty-one years and a right of purchase at a price to be fixed by the District Land Board, not being less than five shillings an acre. The rent is as notified in the *Gazette*. The land must be fenced within seven years. No person may hold more than 3000 acres under right of purchase or perpetual leases.

(v.) *Perpetual Leases.* These leases are granted for the same lands as right of purchase leases at a rent for the first fourteen years as notified in the *Gazette*, and for every subsequent period of fourteen years as fixed by the Board on revaluation. The land must be fenced within seven years. The maximum area which may be held either alone or with right of purchase lands is 3000 acres.

(vi.) *Tropical Products Leases.* Under the Tropical Products Act, 1904, areas (not exceeding 5000 acres to any one occupier) north of the 18th parallel and within 10 miles of Palmerston, may be held under agreement from the Crown. Not more than 100,000 acres may be so disposed of under the Act. The term is for fourteen years and the occupier must use the land for the cultivation of cotton or tropical products, as defined.

During the first three years he must plant one twenty-fifth and during the last four years, at least one-fifth of the land. After the first seven years a rental of one-and-a halfpenny per acre must be paid. The lessee may obtain the freehold on payment of two shillings and sixpence per acre and upon proof that he has expended ten shillings in the aggregate on each acre in cultivation and plant; that he has produced 200 lbs. weight of marketable cotton or tropical products of equal amount in value for every acre held; and that he has cultivated one-third of the land.

(vii.) *Leases for Horse-breeding Stations.* These leases may be granted for a maximum term of 42 years and in maximum blocks of 5000 square miles, for the first seven years at a peppercorn rent, and thereafter at a valuation, but not so as to exceed three shillings, nor be less than one shilling per mile.

(viii.) *Licenses.* Commonage licenses for depasturing sheep or cattle on Crown lands and annual licenses for any purpose approved by the Minister may be granted.

(ix.) *Area held under Lease, 1901 to 1909.* The following table shews the total area held under lease at the end of the year 1901 and from 1905 to 1909:—

NORTHERN TERRITORY.—AREAS HELD UNDER LEASE, 1901 to 1909.

Particulars.	1901.	1905.	1906.	1907.	1908.	1909.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Right of Purchase Leases ...	1,067	2,087	2,397	2,771	2,931	5,224
Pastoral Leases	111,476,240	102,030,240	108,347,680	105,918,880	102,123,040	95,559,840
Other Leases	1,176,981	1,248,019	1,376,010	1,347,858	1,293,457	512,650
Total Leased	112,654,288	103,280,346	109,726,087	107,269,509	103,419,428	96,077,714

7. **Western Australia.**—The following are the various types of leases and licenses issued in this State:—(i.) Pastoral leases; (ii.) permits and licenses to cut timber; (iii.) special leases; and (iv.) licenses for quarrying.

(i.) *Pastoral Leases.* Leases are granted for pastoral purposes throughout the State, but such leases give no right to the soil, or to the timber, except to such timber as may be required for domestic purposes or for the construction of improvements, but the lands leased may be thrown open to selection by the Crown at any time upon giving twelve months' notice to the lessee. All pastoral leases expire on the 31st December, 1928; the following are the conditions upon which such leases are issued in the various divisions of the State:—(*a*) In the South-west Division in blocks of not less than 3000 acres, at an annual rent of £1 for each 1000 acres or part thereof. (*b*) In the Central and North-west Divisions, in blocks of not less than 20,000 acres at an annual rent of ten shillings for each 1000 acres or part thereof. (*c*) In the Eucla Division, in blocks of not less than 20,000 acres at an annual rent of three shillings for each 1000 acres or part thereof. (*d*) In the Eastern Division, in blocks of not less than 20,000 acres at an annual rent of five shillings for each 1000 acres or part thereof. (*e*) In the Kimberley Division, in blocks of not less than 50,000 acres when on a frontage, nor less than 20,000 acres when no part of the boundary is on a frontage, at an annual rent of ten shillings for each 1000 acres or part thereof. Any lessee in the Kimberley Division may obtain a reduction of one-half the rent due for the remaining years of his lease, who at any time during the term of his lease has, and for so long as he has, in his possession on the land the subject of the lease, or of any other lease not separated by a greater distance than twenty-five miles, owned and worked by the lessee as one station, ten head of sheep or one head of large stock for each 1000 acres leased. Under the Amendment Act of 1906, which is not retrospective, it is provided that if any pastoral lease or group of leases worked as one station is not kept stocked, after the first two years from the commencement of the term, at the rate of at least ten head of sheep or one head of large stock for every 1000 acres comprised therein, such lease or leases are liable to forfeiture. In order to facilitate settlement the

necessary twelve months' notice of resumption was given in the year 1908 to all pastoral lessees in that portion of the Eastern Division which was included in the South-western Division by the Amendment Act of 1906. Until the term of this notice expires no selections can take place in these leases without the consent of the lessees.

(ii.) *Permits and Licenses to Cut Timber.* The alienation of forests and timber lands is now regulated by the Lands Act Amendment Acts of 1904 and 1906, under which the Governor is authorised to appoint an Inspector-General of Forests and an Advisory Board consisting of three persons, whose duty it is to advise the Minister upon all matters relating to forest conservation and timber lands. The Governor is authorised to declare any Crown Lands to be a State forest or timber reserve, and to grant to persons desirous of erecting saw-mills permits to cut timber in any State forest or timber reserves, or on any Crown land, upon the following conditions:—(*a*) That the right of cutting timber is granted over an area proportional to the horse-power of the mill proposed to be erected on the basis of the provision of ten years' cutting; (*b*) that the railway or tramway connecting such mill with any Government railway shall be located in such manner as will best serve the country requiring an outlet in that vicinity; (*c*) that the permit is liable to forfeiture in the event of the mill being closed for a period of one month without the consent of the Governor, or in the event of any breach of any condition or provision; (*d*) such other conditions as may be prescribed. Licenses may also be granted to hew and fell timber for piles, poles, or baulks, subject to the payment by the licensee of royalties proportional to the measurement of the timber hewn or felled. The amount of all fees or royalties is fixed by the Governor.

(iii.) *Special Leases.* On receiving an application in the prescribed form the Governor may grant leases of any Crown land for any area not exceeding (except in the cases of leases for guano or other manure, or for the collection or manufacture of salt) twenty-five acres, for a term not exceeding twenty-one years, at a yearly rental of not less than £2, for a variety of purposes, such as:—For obtaining guano, stone, or earth; for sites for inns, stores, bridges, factories, wharves, and jetties; for the working of mineral springs; for the collection and manufacture of salt; for works for supplying water, gas, or electricity; or for any other purpose approved by the Governor. The lessee must pay a deposit of one-half of the first year's rent, and must also pay for the cost of survey. In all cases where it is proposed to grant a lease for a longer period than ten years, notice of the application for such lease and of the purpose and term thereof must be published in four consecutive numbers of the *Gazette*.

(iv.) *Licenses for Quarrying.* Licenses are granted to any person to quarry and dig for any rock, soil, or other material, on any lands vested in the Crown, not being on a goldfield or in a mining district, for building purposes and to make bricks or any other commodity. The fee to be paid for such license is determined by the Governor, not being, however, less than five shillings per month for each man employed.

(v.) *Areas Held under Leases and Licenses, 1901 to 1910.* The following table shews the number and area of leases and licenses issued during the year 1901, and from 1905 to 1910:—

WESTERN AUSTRALIA.—LEASES AND LICENSES ISSUED, 1901 to 1910.

Particulars.	1901.	1905.	1906.[1]	1907.[1]	1908.[1]	1909.[1]	1910.[1]
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Pastoral Leases ...	19,909,251	16,609,822	19,255,374	26,367,463	16,161,172	9,787,020	10,130,358
Special Leases ...	149	3,866	2,805	13,727	71,900	12,498	6,212
Leases in Reserves ...	324	100	1,000	75,640	152,050	31,376	327,020
Timber Leases and Permits[2]	109,630	—	41,370	19,300	30,433	38,500	236,970
Residential Lots ...	221	171	199	21	1	3	6
Total	20,019,575	16,613,959	19,300,748	26,476,151	16,415,556	9,869,397	10,700,566
Number Issued ...	1,466	1,245	1,370	873	870	480	505

1. For financial year ended the 30th June. 2. No timber leases granted since 1903.

Particulars as to the total area occupied under leases and licenses are given in a later part of this section. (See § 11.)

8. **Tasmania.**—The several forms of leases and licenses in this State are as follow:—(i.) Grazing leases; (ii.) miscellaneous leases; (iii.) timber licenses; and (iv.) occupation licenses.

(i.) *Grazing Leases.* Grazing leases of unoccupied country may be offered at auction, but such runs are liable at any time to be sold or occupied by virtue of a license for other than pastoral purposes, and to be otherwise alienated and dealt with. The rent is fixed by the Commissioner, and the run is put up for auction, the highest bidder receiving a lease to occupy the same for fourteen years, which may be transferred by the lessee with consent of the Commissioner, and on payment of a fee of one shilling in the pound on the annual rental. The rent is payable half-yearly in advance, and the lease is determinable, should the rent not be paid within one month of becoming due. In the event of the land being required for sale or for any public purpose, six months' notice must be given to the lessee, who becomes entitled to receive from the Crown compensation for the value of all permanent improvements he may have made during the currency of his lease.

(ii.) *Miscellaneous Leases.* The Governor in Council may grant leases for a period not exceeding fourteen years of any land bordering upon a navigable river, or on the sea, if required for the purpose of constructing wharves, docks, jetties, or any other works of public utility. For whatever purpose the land is leased, the lease may be determined in case of non-completion of the works. Leases may also be granted, on similar conditions and terms, for the purpose of constructing watercourses, or of erecting a manufactory, mill, or such other work, or for constructing railways or tramways.

(iii.) *Timber Licenses.* Temporary licenses for a period not exceeding five years may be granted for the purpose of felling timber, or for removing gravel, clay, or stone, etc., on or from particular localities.

(iv.) *Occupation Licenses.* Occupation licenses may be issued by the Commissioner for a period not exceeding twelve months, to any person of the age of twenty-one or over, upon payment of a fee of five shillings. The license must describe the position and area of the land; no person can hold more than one such license at any time. Any person holding an occupation license is entitled to occupy, during the current year, the surface of any Crown land within any mining area not exceeding one-quarter of an acre. An occupation license is not transferable, and the holder thereof is not entitled to any compensation in respect of any improvements effected on the land, should the same be resumed by the Crown. The license is terminable at any time by three months' notice.

Residence licenses are granted on similar terms upon payment of a fee of ten shillings, and any person holding a residence license is entitled to occupy as a domicile, during the current year, the surface of the land described, which cannot exceed one-quarter of an acre in extent, within any town situate within a mining area.

Business licenses are also granted on similar conditions upon payment of a fee of twenty shillings, and entitle the holder to occupy, during the current year, the surface of any Crown land situated within any mining area not exceeding one-quarter of an acre, not being within a town. Residence and business licenses may be transferred by endorsement to any person eligible.

(v.) *Area held under Leases and Licenses.* The following table shews the areas of Crown lands occupied under leases and licenses at the end of the year 1901 and from 1905 to 1909:—

TASMANIA.—LEASES AND LICENSES, 1901 to 1909.

Particulars.	1901.	1905.	1906.	1907.	1908.	1909.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Ordinary Leased Land	1,280,688	1,082,851	1,117,311	1,145,823	1,235,823	1,173,823
Islands	149,165	89,003	91,131	109,531	103,130	90,100
Land Leased for Timber	40,768	87,932	86,817	88,035	91,972	100,098
Total	1,470,621	1,259,786	1,295,259	1,343,389	1,430,925	1,364,021

§ 8. Closer Settlement.

1. **Introduction.**—In all the States, Acts have been passed authorising the Governments to repurchase alienated lands for the purpose of cutting them up into blocks of suitable size and throwing them open to settlement on easy terms and conditions. Special Acts have also been passed in several of the States authorising the establishment on particular lines of co-operative communities, village settlements, and labour colonies. Lands may be acquired either compulsorily or voluntarily in New South Wales, Victoria, Queensland, and Tasmania, but only voluntarily in South Australia and Western Australia.

The following table gives particulars up to the latest available date of operations under the Closer Settlement Acts for each State and the whole Commonwealth :—

CLOSER SETTLEMENT.—TOTAL AREAS ACQUIRED AND ALLOTTED UP TO 30th JUNE, 1910.

Particulars.	N.S.W.	Victoria.	Qld.‖	S. Aust.	W. Aust.	Tas.	Cwlth.
Area acquired ... ... acres	461,723	343,829	497,095	521,269	249,522	34,448	2,107,886
Purchasing price ... £	1,624,858	2,390,738	1,349,251	1,283,000	158,041	98,412	6,904,300
Farms, etc., allotted { No.	941	1,880	1,741	1,503	†	140	6,205*
Farms, etc., allotted { area	471,639	240,189	409,381	494,483	213,416	29,455	1,858,563

* Exclusive of Western Australia. † Not available. ‖ To 31st December, 1909.

The following table shews the areas of private lands acquired in each State for each financial year from 1901 to 1910 inclusive :—

CLOSER SETTLEMENT.—AREAS OF PRIVATE LANDS ACQUIRED, 1901 to 1910.

Year ended 30th June.	N.S.W.	Victoria.	Q'land.*	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901	...	28,553	132,760	...	46,624	...	207,937
1902	...	33,655	266,925	156,481	55,439	...	512,500
1903	...	33,662	286,952	156,481	72,372	...	549,467
1904	...	33,662	308,605	174,963	131,283	...	648,513
1905	...	36,516	308,605	214,752	148,614	...	708,487
1906	53,523	148,902	381,724	260,355	165,945	...	1,010,449
1907	142,403	207,775	409,563	326,576	170,881	13,397	1,270,595
1908	142,403	211,140	456,742	354,454	170,881	25,177	1,360,797
1909	321,209	237,400	497,095	500,464	215,822	33,079	1,805,069
1910	461,723	343,829	497,095†	521,269	249,522	34,448	2,107,886

* Particulars are for calendar years. † Up to the 31st December, 1909.

2. **Government Loans to Settlers.**—For the purpose of promoting pastoral, agricultural, and similar pursuits, and with the object of assisting settlers in erecting buildings and carrying out improvements on their holdings, general systems have been established in all the States, under which financial aid is rendered to settlers by the State Governments. These general systems are more particularly referred to in the section in this book dealing with "Agriculture." In many of the Closer Settlement and similar Acts, however, special provisions have been inserted with the object of lending money to settlers taking up land under these Acts, with which to build homes or effect improvements. The principal features of these provisions are referred to below.

3. **New South Wales.**—Under the Closer Settlement Act of 1901 provision was made for the acquisition of private lands or of Crown lands held under lease, for the purpose of closer settlement. No power of compulsory resumption was conferred by the Act, which was consequently practically inoperative. Under the Closer Settlement Act of 1904, as amended in 1906, 1907, and 1909, the Government is empowered to resume private lands, either by agreement or by compulsory purchase, and to alienate them on favourable terms to persons who desire to settle and make homes for themselves and their families on the soil. The administration of the Closer Settlement Acts is in the hands of a Board, consisting of the President and Commissioners of the Land Appeal Court and the Chairman and members of the Local Land Board for the district in which the land under inquiry is situated. Under the Act of 1907 three Advisory Boards have been appointed, one for each of the northern, central-western, and southern portions of the State, embracing the whole of the Eastern and Central Territorial Divisions, to report to the Minister what private lands are suitable for closer settlement. This Act also gave power to acquire lands within fifteen miles of any approved railway line, exclusive of the enhancement in value on account of such railway. Land acquired under the Acts is subdivided into blocks or farms, and by notification in the *Government Gazette* is declared to be a settlement purchase area available for application. The *Gazette* notice also gives all necessary information as to the class and character of the land, and the capital value, area, etc., of each block or farm. Under the Amending Act of 1909 any land within a settlement purchase area unsuitable for disposal under the provisions of the Closer Settlement Act, may be disposed of by sale or lease, by auction or tender, upon terms and conditions to be determined.

(i.) *Closer Settlement Purchase.* Under this tenure a settler may acquire the freehold of the land under a system of deferred payments. A male applicant must not be under the age of eighteen years, or a female under twenty-one years. A deposit of 5 per cent. of the notified value of the settlement purchase must be lodged with the application, and a similar amount by way of instalment, paid annually until the purchase-money, together with interest at the rate of 4 per cent., is paid off. Under this system the balance due to the Crown will be paid off in thirty-eight years, the holding then becoming a freehold. A condition of residence for ten years attaches to every settlement purchase, and the purchaser must commence to reside on his holding within twelve months after the date of the Land Board's decision allowing the purchase, unless the commencement of residence is extended to some date within five years from the date of purchase, on such terms and conditions as to improvements and cultivation as may be agreed on between the Local Board and the purchaser. With the Board's permission, residence may be performed in any adjacent village or town. Under the amending Act of 1909 postponement of the payment of instalments may be granted by the Minister, subject to the conditions (*a*) that additional improvements to the value of the amount postponed be made on the land within twelve months, and (*b*) that interest at 4 per cent. per annum be paid on the amount postponed.

(ii.) *Closer Settlement Annual Leases.* Leases for areas not exceeding 320 acres may be obtained under the Closer Settlement Acts, subject to such conditions as the Governor may prescribe. Land so leased may not be improved without the written consent of the Minister, or of the Chairman of the Local Land Board, which Board fixes the annual

rent. These leases expire on the 31st day of December of the year in which they are granted, but may be renewed from year to year on payment of the yearly rent in advance, not later than the 10th December of each year. The granting of a lease of this kind will not exempt the land held thereunder from being granted as a settlement purchase, and on a valid application for a settlement purchase the lease of so much of the land as is applied for is thereby determined from the date of that application. In such cases the rent will be adjusted, and any balance paid in excess refunded. The Minister has power to cancel the lease at any time by giving not less than three months' notice in the *Gazette* of his intention to do so.

(iii.) *Sales by Auction.* Areas within closer settlement districts necessary for township settlement may be set apart by notification in the *Gazette*. Allotments, each of which may not exceed half an acre in extent, within such areas may be sold by auction.

(iv.) *Private Sub-division.* An important feature of the amending Act of 1909 is the power which is given to owners for private sub-division of lands which have been notified by proclamation for resumption. Upon the owner entering into an agreement with the Minister to sub-divide the land and to sell or lease in such areas and subject to such terms as may be agreed upon, the Minister is empowered to suspend the power of resumption for a period not exceeding two years. All sales and leases of the land must be notified to the Minister, who may refer the matter to the Local Land Board for inquiry as to whether the terms of the agreement have been carried out; in case it be decided that the owner has failed to fulfil these terms, the suspension of the power of resumption ceases. In August, 1910, two estates, covering an area of 25,000 acres, were being dealt with under the Act by private sub-division.

(v.) *The Closer Settlement Promotion Act 1910.* Under this Act any three or more persons who are qualified to hold settlement purchases and who desire to purchase from the same owner any private lands may, upon entering into an agreement with the owner and subject to valuation by the Advisory Board and the Savings Bank Commissioners, acquire such lands through the Minister on Closer Settlement conditions. The maximum sum which may be advanced for the purposes of this Act may not exceed £1,000,000 in any financial year.

(vi.) *Areas Acquired and Disposed of, 1901 to 1910.* Up to the 30th June, 1910, ten areas had been opened for settlement under the Closer Settlement Acts.

The following statement gives particulars of the areas opened up to the 30th June, in each year from 1906 to 1910:—

NEW SOUTH WALES.—CLOSER SETTLEMENT AREAS, 1908 to 1910.

Year Ended the 30th June.	Areas.			Capital Values.		
	Acquired Lands.	Adjoining Crown Lands.	Total.	Acquired Lands.	Adjoining Crown Lands.	Total.
	Acres.	Acres.	Acres.	£	£	£
1906 ...	53,523	13,166	66,689	137,795	24,589	162,384
1907 ...	142,403	25,712	168,115	438,490	37,178	475,668
1908 ...	142,403	25,719	168,122	438,362	37,192	475,554
1909 ...	321,209	28,064	349,273	1,246,508	42,878	1,289,386
1910 ...	461,723	83,045	544,768	1,624,858	147,977	1,772,835

The total area thus set apart has been divided into 1,023 farms comprising 524,217 acres, the remaining 20,551 acres being reserved for recreation areas, roads, stock routes, schools, etc. Up to the 30th June, 1910, 1001 of these farms had been allotted, while proclamations of the intended acquisition of fifteen estates, covering an area of 358,765

acres, had been gazetted. The following table gives particulars as to the disposal of the farms by closer settlement purchase for each year ended the 30th June, 1905 to 1910 :—

NEW SOUTH WALES.—CLOSER SETTLEMENT ALLOTMENTS, 1905 to 1910.

Year.	Farms Allotted by Board to Date.			Total Amount received in respect of Settlement Purchases.	Total Number of Applications received.
	Number.	Area.	Value.		
	No.	Acres.	£	£	No.
1904-5 ...	49	18,568	56,235	2,817	50
1905-6 ...	98	48,567	120,445	6,560	120
1906-7 ...	320	154,922	470,787	24,698	551
1907-8 ...	326	157,649	475,554	31,793	558
1908-9 ...	683	312,075	1,192,283	73,133	953
1909-10 ...	941	471,639	1,731,480	147,945	1,209

(vii.) *Labour Settlements.* These settlements were founded by the Labour Settlements Acts 1893 and 1894, which have now been amended and repealed by the Labour Settlements Act 1902. Land may be set apart for lease for a period of 28 years as a labour settlement under the superintendence of a Board of Control, consisting of from eight to sixteen members appointed by the Governor. The rent is fixed by the Minister after appraisement by the local board. The functions of the Board of Control are to enrol members of the settlement ; to make regulations concerning the work to be done ; to apportion the work among the members ; and to distribute the wages and profits. The Board may establish any trade or industry, and must distribute the profits among the enrolled members.

(*a*) *Government Aid to Settlers.* The Minister is empowered to grant financial assistance to the Board of Control to an amount not exceeding £50 for each enrolled member, who is the head of a family dependent upon him ; £40 for each married person without a family ; and £30 for each unmarried person. On the expiration of four years from the commencement of the lease, and at the end of each year following, 8 per cent. of the total sum advanced to the Board is a charge on its revenue, until the total amount, with interest at 4 per cent., is repaid.

(*b*) *Settlements Established.* Only two settlements had been established under the Act up to the 30th June, 1910. Particulars are given in the following statement :—

NEW SOUTH WALES.—PARTICULARS OF LABOUR SETTLEMENTS, 30th JUNE, 1910.

Settlement.	Date of Establishment.	Area.	Population.				Value of Improvements.	Loans Advanced by the Government.
			Men Enrolled.	Women.	Children.	Total.		
		Acres.					£	£
Bega	1893	1,360	25	30	90	145	3,110	2,420
Wilberforce ...	1893	435	10	9	32	51	1,280	2,480
Total ...	—	1,795	35	39	122	196	4,390	4,900

4. **Victoria.**—(i.) *Closer Settlement Acts, 1904 to 1909.* The Closer Settlement Acts (see § 2, p. 239, hereof) are administered by a Board consisting of three persons appointed by the Governor-in-Council, and intrusted with power to acquire, either compulsorily or

by agreement, private lands in any part of the State for the purpose of Closer Settlement. All private lands acquired by the Board must be paid for at the option of the owner by money, debentures, or stock. The Governor was authorised from time to time during the first five years from the date on which the Act of 1904 came into force to increase the amount of Victorian Government Stock by an amount not exceeding £500,000 in any one year, or to issue debentures for the whole or any part of such sum in lieu of increasing the amount of stock. Under the Act of 1909 power to raise money for the purposes of the Act was extended for a further period of twelve months. The Board may dispose of all lands acquired, either Crown lands or repurchased lands, on conditional purchase leases either as farm allotments, workmen's homes allotments, or agricultural labourers' allotments. The price of the land disposed of is to be so fixed as to cover the cost of original purchase, the cost of survey and subdivision, the value of lands absorbed by roads and reserves, and the cost of clearing, draining, fencing, or of other improvements which the Board may effect, or expenses which it may incur, prior to the disposal of the land. The land to be disposed of is divided into (*a*) farm allotments not exceeding £2500 in value, (*b*) workmen's homes allotments not exceeding £100 in value, and (*c*) agricultural labourers' allotments not exceeding £200 in value. Land acquired by the Board may also be sold in small areas in fee simple as sites for churches, public halls, butter factories, creameries, or recreation reserves, and if any land is not taken up under lease within one year after being declared available, it may be sold by auction. The Amendment Act of 1909 provided for the sale of areas for quarries for stone, gravel, etc.

The Board may approve of an agreement between an owner and one or more persons to purchase a farm or farms, not exceeding £2500 in value. On the property being acquired by the Board, the applicant obtains a lease under Closer Settlement conditions.

(*a*) *Closer Settlement Leases.* An application for a lease must be accompanied by a deposit equal to one instalment, equal to 3 per cent., of the purchase money of the allotment of the highest value of those applied for, and the registration and lease fees thereof. Not more than one allotment may be held by one lessee. Every conditional purchase lease is for such a term of years as may be agreed upon by the lessee and the Board, and payment must be made with interest at 4½ per cent. per annum by sixty-three half-yearly instalments, or such lesser number as may be agreed upon. Under the amending Act of 1906 postponement of payment of instalments may be granted by the Board up to 60 per cent. of the value of improvements, and payment of the areas may be made over a definite time, or the lease may be extended for a corresponding period. The lease is subject to the following conditions :—The lessee must destroy vermin and noxious weeds to the satisfaction of the Board within three years ; he must enclose the land within one year, or if he use the allotment for grazing purpose only, within three months ; he must personally reside during eight months in each year, during the currency of the lease, on his allotment ; he must make improvements equivalent in value to at least two instalments payable for the land before the end of the first year ; to the value of 10 per cent. of the purchase-money before the end of the third year, and to the value of a further 10 per cent. before the end of the sixth year, being a total of one-fifth of the value of the land. If all covenants and conditions have been duly complied with the lessee may, after six years, and with the written consent of the Board, transfer, assign, mortgage, or sublet his allotment. A Crown grant may be issued after the expiration of twelve years on payment of the balance of the purchase-money, if all conditions have been complied with. Any land may be resumed by the Crown for public purposes upon payment of compensation to the lessee for the loss of his allotment or part thereof, and for any improvements erected by him thereon. In the case of workmen's homes allotments the land must be fenced within one year, and a dwelling-house to the value of at least £50

must be erected within the same time; within two years further improvements must be made to the value of at least £25. As regards agricultural labourers' allotments, a dwelling-house to the value of at least £30 must be erected within one year, and in two years the allotment must be fenced.

(*b*) *Advances to Settlers.* The Board may make advances for the purpose of fencing and building dwelling-houses, and is empowered to erect dwelling-houses, outbuildings, or improvements on any allotment at a cost not exceeding £250 for any one allotment. Any sum so expended, together with interest at 5 per cent. per annum, is repayable by equal half-yearly, quarterly, or monthly instalments, extending over such a period not greater than twenty years as may be prescribed. Provision has been made to enable lessees, who, through unpropitious seasons or other adverse circumstances, are unable to meet their instalments as they fall due, to have them deferred, and those lessees who have expended all their available capital in improving their holdings, are enabled to obtain an advance to continue working and improving their allotments. All such deferred payments or moneys advanced carry interest at 5 per cent. Under the Closer Settlement Act 1909, any tenant of Crown Lands may obtain an advance from the Board to the amount of 60 per cent. of the value of the permanent improvements effected by him, the limit of such advance being £500. Special advances may also be granted to purchase wire-netting in rabbit-infested districts.

(*c*) *Loans to Municipalities.* The Amendment Act of 1907 provides that by approval of the Minister of Lands and under the certificate of the Inspector-General of Public Works, loans may be made to the council of any municipality out of the Closer Settlements Fund for the purpose of carrying out any road-making or other public works within the boundaries of an estate.

(*d*) *Areas acquired and made available for Closer Settlement, 1901 to 1910.* The following statement shews the operations which have taken place in Victoria under the provisions of the Closer Settlement Acts, 1898 to 1910, up to the 30th June in each year from 1901 to 1910, inclusive :—

VICTORIA.—CLOSER SETTLEMENT, 1901 to 1910.

Year ended 30th June.	Total Area Acquired by Government to Date.	Total Cost to Date.	How Made Available for Settlement.					Number of Applications Granted to Date.	Total Receipts to Date.	Repayments of Principal to Date.	Area Available for Settlement.
			Farm Allotments.	Workmen's Homes Allotments.	Agricultural Labourers' Allotments.	Town Allotments.	Roads and Reserves.				
	Acres.	£	Acres.	Acres.	Acres.	Acres.	Acres.	No.	£	£	Acres.
1901	28,553	151,566	28,461	69	—	44	240	193	7,529	—	—
1902	33,655	205,715	33,477	69	—	48	329	239	21,181	5,002	—
1903	33,662	206,285	33,483	69	—	48	329	239	28,846	6,921	—
1904	33,662	209,341	33,483	69	—	48	329	239	42,128	16,625	—
1905	36,516	228,982	35,513	152	366	48	335	336	56,549	18,110	19
1906	148,902	1,008,839	116,371	186	924	232	775	933	92,638	28,869	2,790
1907	207,775	1,349,661	156,358	428½	1,108	308½	827½	1,212	163,203	60,224	2,429
1908	211,140	1,471,300	186,971	473	917	724	1,708	1,470	245,095	85,501	10,549
1909	237,400	1,579,958	193,015	228	660	610	2,242	1,645	337,803	121,247	5,789
1910	343,829*	2,390,738	237,670	243	1,659	617	2,242	1,880	391,746	153,890	9,302

* Includes eight estates (97,315 acres) not yet made available for settlement.

(e) *Areas Alienated and in Process of Alienation, 1901 to 1910.* The following table shews, so far as available, particulars of areas alienated absolutely and in process of alienation on the 30th June, 1901, and from 1905 to 1910, inclusive :—

VICTORIA.—CLOSER SETTLEMENT. AREAS ALIENATED AND IN PROCESS OF ALIENATION, 1901 to 1910.

Particulars.	1901.	1905.	1906.	1907.	1908.	1909.	1910.
	Acres	Acres.	Acres.	Acres.	Acres.	Acres.	Acres
Alienated Absolutely—							
Conditional Purchases completed ...	...	...	274	1,700	2,504	4,924	8,705
Sold for cash, etc.	183	193	237	239	268	1,307	1,320
Total	...	...	511	1,939	2,772	6,231	10,025
In Process of Alienation	...	37,996	114,691	164,561	174,812	190,784	221,565

(ii.) *The Small Improved Holdings Act 1906.* The object of this Act was to assist deserving persons to acquire small improved holdings in rural districts as close as possible to centres of population, where industrial employment may be obtained. The Governor was authorised to set apart any unoccupied Crown lands, or any land acquired under the Closer Settlements Acts, for the purpose of small improved holdings, and was empowered to raise money for the purpose of acquiring private land adapted for small holdings. All lands so set apart were to be divided into holdings not exceeding £200 in value, and power was given so that the land could be adapted for any purposes of husbandry by erecting improvements to the value of not more than £150 on any one allotment. This Act has, however, been superseded by the Closer Settlement Act 1909.

Land for settlement was purchased at Mordialloc, Thomastown, Geelong, Wangaratta, Bellarine, Daylesford, and Warragul, comprising in all 2822 acres of land at a cost of £53,568, and allotted to 260 settlers. The work of building houses for the settlers was undertaken by the Government (the settlers being employed on the work). The necessary teams and implements were provided, thereby assisting the settlers in making the land immediately productive.

The Small Improved Holdings Act has been repealed, the settlements made thereunder being now under the control of the Closer Settlement Board.

(iii.) *Village Communities.* Under the Settlement on Lands Act 1893, a system of small holdings was inaugurated, with monetary assistance granted to the holders by the Government, but owing to altered circumstances and the introduction of the Closer Settlement Act, the original enactment, although now embodied in the Land Act 1901, is not availed of to any extent. It provided that any unalienated Crown lands, not being auriferous or permanently reserved for any purpose, might be proclaimed and appropriated for the purposes of village communities. Such lands were originally surveyed into allotments of from one to twenty acres, according to the quality of the soil and the situation of the land, and the price fixed at not less than twenty shillings an acre, but under the Land Act 1901 (Secs. 344-346), additional areas may be acquired by conditional purchase, the value of which, together with the original holding, may not exceed £200. An applicant must not be under the age of eighteen years, nor the owner of the fee simple of two acres or over, nor the lessee of a pastoral allotment or grazing area, nor the holder of an agricultural allotment license. Permits to occupy may be granted for a period not exceeding three years at a nominal rental, and it is provided that monetary assistance not exceeding £50 may be advanced for the purpose of erecting buildings and improvements, but Parliament has not voted any money for this of recent years. Such loan is repayable in twenty equal annual instalments. The total amount of monetary aid advanced up to the 30th June, 1910, was £67,379, of which sum the amount repaid to date was

£35,233. On the expiration of the period for which the permit is granted a lease may be obtained, provided that the conditions of occupancy have been fulfilled. The lessee must pay the value of the allotment by forty equal half-yearly instalments and must also pay within five years the cost of survey in ten equal half-yearly instalments. Personal residence by the lessee or his family is essential. A Crown grant of the freehold may be obtained at any time after six years from date of lease on payment of the balance of amounts due if all the conditions have been fully complied with. Within one year from the date of the lease the land must be enclosed by a fence, and within two years one-tenth of the area must be cultivated, which must be increased to one-fifth by the end of the fourth year. Within six years, in addition to the cultivation, permanent improvements to the value of £1 for each acre must be effected. Any person in occupation of an allotment under permit or lease may surrender the same and acquire the land under a perpetual lease or a conditional purchase lease, when rents paid and improvements effected may be credited.

Homestead Associations, originally provided for under the Settlement on Lands Act 1893, did not prove successful. The provisions relating thereto were therefore repealed in 1904.

The area originally made available under the Settlement on Lands Act was 156,020 acres in eighty-five different localities in the State. A large proportion of that area was, however found to be unsuitable for village settlement purposes, and has been withdrawn from the operation of the Act. Particulars of areas in process of alienation under the Act are given below. (See § 11, 3.)

On the 30th June, 1910, there were 1262 settlers actually residing, and there were 153 not residing, but improving, making a total of 1415 in occupation. Including wives and children the total number in residence was 6247. At the same date the area under cultivation was 21,100 acres; the value of live stock £56,215, and of improvements £240,496.

5. **Queensland.**—Under the provisions of the Closer Settlement Act of 1906 private lands may be repurchased by the Crown, either by agreement or compulsorily. The price of all land so acquired is paid for in cash from the Consolidated Revenue Fund, or in cash the proceeds of the sales of debentures, or at the option of the Minister, and with the consent of the owner, wholly or in part by the issue to the owner of debentures. Any land which it is proposed to acquire under the provisions of the Act must be inspected by a member of the Land Court, who must furnish a report to the Minister; the land may thereupon be acquired by agreement, with the approval of the Governor-in-Council, at a price not exceeding by more than one-tenth the value thereof stated in the said report.

(i.) *Compulsory Acquisition.* The compulsory provisions of the Act only apply where the private land proposed to be acquired exceeds £20,000 in value, exclusive of improvements. All claims for compensation are determined by the Land Appeal Court, whose award is final and without appeal. The owner of an estate in possession, the whole of which is proposed to be taken compulsorily, has the right to retain in one block out of the estate, for the purpose of residence or business, land the value of which (exclusive of improvements) does not exceed £10,000, or £15,000 in the case of an estate the unimproved value whereof exceeds £50,000, or £20,000 in the case of an estate the unimproved value whereof exceeds £100,000. The maximum sum which may be expended on the acquisition of land for the purposes of closer settlement is £500,000 in any one year.

(ii.) *Disposal of Land.* A sufficient part of the land acquired must be set apart for roads, public reserves, and townships, and the remainder is proclaimed open for selection as agricultural farms under the Land Acts 1897 to 1909; the term of the lease is, however, twenty-five years instead of twenty years as provided by the Land Acts. The selector must fence the land within two years from the issue of the license to occupy, or must make permanent improvements of an equivalent value. The rent to be paid for the first year is equal to £10 for every £100 of the purchasing price; and (no payment being required during the second, third, or fourth years) an annual payment of £8 2s. 7d. for

every £100, continued from the fifth to the twenty-fifth year will, at the end of the term, have paid off the principal sum together with interest. Payment of the balance of the purchase-money may be made at any time after the expiration of the fifth year of the lease, and a rebate of interest will be made accordingly. Land remaining open for selection as agricultural farms for at least twelve months may thereafter be proclaimed also open for selection as unconditional selections.

(iii.) *Areas Acquired and Selected, 1901 to 1909.*—The operations under the Closer Settlement Acts resulted up to the end of the year 1909 in the acquisition by the Government of twenty-seven estates, of a total area of 497,095 acres, at a total cost of £1,349,251. The following table gives particulars of the operations under the above Acts at the end of each year from 1901 to 1909, inclusive:—

QUEENSLAND.—CLOSER SETTLEMENT, 1901 to 1909.

Year.	Number of Estates Acquired.	Total Area Acquired to Date.	Total Amount of Purchase Money.	Total Area Selected to Date.
		Acres.	£	Acres.
1901	15	132,760	335,056	124,710
1902	19	266,925	699,815	230,149
1903	20	286,952	790,445	253,096
1904	21	308,605	877,058	277,939
1905	21	308,605	877,058	289,873
1906	24	381,724	968,844	301,908
1907	26	409,563	1,057,463	340,405
1908	27	456,742	1,208,013	364,334[1]
1909	27	497,095	1,349,251	409,381

1. In addition there were at the end of the year 1909, 10,748 acres sold at auction and 3119 acres retained by the Government for experimental farms and other sales.

The total area opened for selection up to the end of the year 1909 was 434,027 acres, of which 409,381 acres had been selected by 1741 selectors at a total purchasing price of £1,218,121. There remained 24,646 acres unselected or reserved. The total amount of rent paid up to the same date was £578,726, the amount in arrear being £9627. At the end of the year 1909 there were 1741 selectors holding 1781 agricultural farms, 239 unconditional selections, and two prickly pear infested selections. In addition, land and improvements to the value of £72,889 had been sold at auction.

(iv.) *The Special Agricultural Selections Acts 1901 to 1905.* Under the Special Agricultural Selections Act 1901 to 1904, now repealed and amended by the Lands Acts Amendment Act 1909, land may be set apart as homesteads, farms, or prickly pear or perpetual lease selections, for any body of settlers, who, having some measure of common interest or capacity for mutual help, are desirous of acquiring land in the same locality. The procedure to be followed is for a request to be made to the Minister by the members of the body, explaining the grounds on which they are co-operating, and setting out the land they desire to acquire. Should the request be acceded to the land will be opened for selection in the usual way, but for a period to be stated in the proclamation it will only be available for the members of the body of settlers for whom it has been set apart. In the case of group selections, the maximum areas which may be selected are as follows:—Agricultural homestead, 320 acres; prickly pear selection, 2560 acres; grazing homestead, 3000 acres; and grazing farm, 2000 acres (the aggregate area of an agricultural farm and a grazing farm held in conjunction therewith may not exceed 3280 acres.) By the Land Act Amendment Act 1905 a new departure has been made in providing that lands may be set apart for exclusive selection in Great Britain. Application to select such lands should be made at the office of the Agent-General, and selectors of such land

will have credited towards the purchasing price the money paid for the passages of themselves and families to Queensland, not exceeding, however, £17 per "statute adult."

The Special Agricultural Selections Act 1905 (which, although an amendment to the Acts of 1901 and 1904, is not administered by the Department of Public Lands, but by the Department of Agriculture), provides that the Secretary for Agriculture may extend financial aid to all or any of the members of a body of selectors of agricultural homesteads under the principal Act. By regulations made under this Act it is provided that applicants for aid must be married men who desire to engage in farming, but do not possess sufficient money. For each body of selectors there must be an overseer, who acts as manager of the general business of the body during such period as the minister thinks proper. During such period each selector must be amenable to and must obey all lawful orders and decisions of the overseer, who also acts as arbitrator in all disputes between the settlers. The overseer must keep an advance account for each settler, shewing the amount of aid extended. This account must be debited with interest at 5 per cent. per annum. Railway fares for the settler and his family to the station nearest to the selection, as well as the rent and proportionate parts of the survey fees payable for the first and second years, may be debited to the advance account. Advances may also be made to each selector to a value not exceeding £80 for the purpose of buying rations and tools, and to a value not exceeding £60 for the purpose of buying stock and poultry. After the expiration of two years the selector must repay the amount of his debt, within a term of twenty-three years, by half-yearly instalments with interest at the rate of £3 7s. 4d. per cent.

The portions opened for "group settlement" in 1909 numbered 715, and comprised a gross area of 728,962 acres. Up to the end of that year 506 portions, comprising 568,627 acres, valued at £269,370, had been applied for by members of the bodies of settlers for whom they were opened. The greater part of the remaining lots have since been selected.

6. **South Australia.**—Under the provisions of the Crown Lands Acts the Commissioner may repurchase land for the purposes of closer settlement at a cost not exceeding £200,000 in any one year, subject to the conditions (*a*) that the repurchase be recommended and the improvements valued by the Board and the Surveyor-General, and (*b*) that full particulars as to the locality, area, and quality of the land, and the price paid, be laid before Parliament.

Reference has already been made to the provisions of the Irrigation and Reclaimed Lands Acts 1908, regarding the settlement of reclaimed lands. (See § 7, 5 iv.)

(i.) *Disposal of Land.* Repurchased areas, except such portions as may be required for town lands, which are sold by auction, or for reservation for public purposes, are cut up into blocks, each of which does not exceed £2000 in unimproved value, or in the case of improved blocks or grazing land does not exceed £4000. These blocks are offered for sale, and the purchaser must enter into an agreement to purchase his block and the improvements at the price fixed by the Board, and to pay the purchase-money and interest thereon at 4 per cent. per annum by seventy half-yearly instalments, the first ten payments being interest only. Purchase may be completed by paying the balance of the purchase-money after holding the land for nine years. Each person holding an agreement to purchase repurchased lands must spend in substantial improvements on his block, during each year for the first five years, a sum equal to £3 for every £100 of his purchase-money. Should any repurchased land remain unallotted over a year after being offered, it may be offered on miscellaneous lease on terms fixed by the Board, or, if the Board so recommend and the Commissioner approve, it may be sold by public auction, a reserve being fixed by the Board, the terms being 25 per cent. of the purchase-money in cash, and the balance in five yearly instalments, bearing interest at 4 per cent. per annum. Any amount in arrear on repurchased lands may, with interest at 5 per cent., be sued for in court by the Receiver of Rents.

(ii.) *Areas Acquired and Selected.* The following table shews the area of land acquired by the Government in South Australia for the purposes of closer settlement, and the manner in which the same has been disposed of under the provisions of the Crown Lands Acts:—

SOUTH AUSTRALIA (PROPER).—CLOSER SETTLEMENT, 1902 to 1909.

Year.	Area of Lands Repurchased to Date.	Agreements with Covenants to Purchase.	Total Area Leased as Homestead Blocks.		Perpetual Leases.	Miscellaneous Leases.	Sold.	Remainder Unoccupied (including Roads).
			Right of Purchase.	Perpetual Lease.				
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1902	156,481	—	2,717	3,073	90,128	309	403	59,851
1903	156,481	60,331	2,487	2,895	89,378	274	566	550
1904	174,963	81,556	2,268	2,795	86,881	295	626	542
1905	214,752	116,854	2,057	2,907	82,431	295	736	9,472
1906	260,355	168,930	1,930	2,482	78,642	295	1,987	6,089
1907	326,576	235,673	1,758	2,306	77,017	211	4,808	4,803
1908	354,454	261,457	1,590	1,953	74,651	281	9,142	5,380
1909	500,464	296,013	1,381	1,779	75,045	50,056	24,641	51,549

During the financial year 1909-10 four estates aggregating 62,719 acres were repurchased. The total area repurchased at the 30th June, 1910, was 521,629 acres the purchase money being £1,283,000. Of that area 494,483 acres had been allotted to 1503 persons, the average area to each being 329 acres.

(iii.) *Irrigation Areas.* Under the Irrigation and Reclaimed Lands Acts 1908 and 1909, special provisions are made for granting perpetual leases of reclaimed lands. The Governor is authorised to proclaim irrigation areas, and the Commissioner for Crown Lands must cause the land included in any such area to be divided into blocks. Any block may contain not more than fifty acres of reclaimed land, and fifty acres of land considered by the Commissioner to be irrigable, and may also contain any area of other land. Each block is offered on perpetual lease, at a rent not less than a sum equivalent to 4 per cent. on the unimproved value of the land, plus the cost of reclaiming and of providing pumping and irrigation channels. For the first year only one-quarter of the fixed rent is payable, for the second year one-half, and for the third year three-quarters.

(*a*) *Irrigation Boards.* When leases have been granted of not less than two thirds of the blocks in any irrigation area, the Governor may constitute a Board to take over the control and management thereof from the Commissioner, who may advance loans to the Board, repayable with interest at 4 per cent. by twenty annual instalments, the first instalment to be paid at the expiration of five years from the date of advance. The Irrigation Boards are vested with wide powers and exercise within the irrigation areas all the duties and powers of District Councils.

(*b*) *Government Loans to Settlers.* Under Part V. of the Act a fund is to be constituted, to be called the Lessees of Reclaimed Lands Loan Fund, consisting of moneys provided by Parliament. Advances may be made by the Commissioner to assist lessees (*a*) in erecting and completing permanent buildings and in making improvements on their lands, and (*b*) in making improvements which permanently increase the capital value of the land, such as grubbing, fencing, constructing drains, wells, tanks, and the like. Advances for the first purposes (*a*) may not exceed one-half the cost to the lessee of the permanent buildings and improvements then subsisting on his block, and for the second purposes (*b*) may not exceed one-half the value of the improvements, while the total amount owing by any lessee may not exceed £125. Loans must be repaid with interest at 4 per cent. by twenty equal annual instalments, the first instalment to be paid at the expiration

of five years from the date of advance. In cases of hardship the time may be extended by the Commissioner, the deferred payments carrying interest at 5 per cent.

In January, 1910, the Waikerie village district was proclaimed an irrigation area.

(iv.) *Village Settlements.* Out of the reserved lands the Commissioner is directed to set apart for the purpose of village settlement such land as he shall consider fit (*a*) for horticultural purposes, to be termed "horticultural land"; (*b*) for agricultural purposes, to be termed "commonage land"; and (*c*) land whereon any irrigation works are situated. Land so set apart is to be divided as follows:—Horticultural lands into blocks of as nearly as practicable equal unimproved value, and of about ten acres in extent; and the commonage lands into one or more blocks of such area as the Commissioner may determine, and the lands so set apart in each case form the district of the association. No person may hold more than two blocks. Commonage lands may only be leased to the association on perpetual lease, and all unleased horticultural blocks are under the control of the association. The annual rent reserved by any lease is fixed by the Board, and commences at a date fixed by the Commissioner. The value of the improvements on each horticultural block, and the value of irrigation works and of improvements on commonage lands, and interest thereon at 4½ per cent. per annum, are first charges upon the block and upon the property of the association respectively, and are to be paid by forty-two annual instalments. The Commissioner is empowered to expel any member from any association; to control the expenditure of any moneys by associations; to call upon any trustee of an association to retire; to require an association to increase the number of its members; to make, amend, and repeal rules for the management of an association, and for the regulation of any irrigation works. Every member of each association must provide or contribute towards the maintenance and regulation of irrigation works and the care and cultivation of the commonage lands, such labour (not being less than thirty-six days every six months) as the Commissioner may require, or an equivalent sum in cash. Every association must prepare an account once a year of the working of the commonage land, shewing all expenditure and income in connection therewith, and after providing for rent, working expenses, and for depreciation and renewal of plant, the surplus, after deducting 25 per cent. for sinking fund for renewal of plant, etc., may be divided among the members of the association.

As the Waikerie district has been proclaimed an irrigation area under the Irrigation and Reclaimed Lands Acts 1908 and 1909, and the settlers at both Ramco and Kingston have applied to be dealt with under the same Acts, this would only leave the Lyrup Village Settlement, which is in a better position, both financially and as regards population, than the others.

(v.) *Homestead Blocks.* The Commissioner may cause any Crown lands reserved for the use of aboriginals, except such lands as are reserved for the occupation of aboriginals at Point McLeay or Point Pearce, to be surveyed and offered as homestead blocks on perpetual lease or lease with a right of purchase, and may, subject to the approval of Parliament, by purchase, exchange, or otherwise, acquire lands suitable for homestead blocks, and lease them in a similar manner. Each block must not exceed £100 in value, and must be resided on at least nine months every year by the lessee or purchaser, or by his wife or a member of his family. The holder may have his lease or agreement endorsed "Protected Homestead Block," and the effect of such endorsement will be that no subsequent encumbrance on the land by the holder will be valid, nor will the block be liable to seizure for debt, except for rates and taxes, nor, unless so willed, will it become assets for payment of debts after the death of the holder. If a holder is unable to continue in occupation of his block he may, on the recommendation of the Land Board, and with the Commissioner's consent, assign or sublet it.

There is now hardly any demand for homestead blocks, persons generally preferring small blocks of repurchased or Crown lands on ordinary conditions. The system appears

to be only of value in centres of population where work can be obtained, and within a reasonable distance of a school.

(*a*) *Advances to Blockholders.* Advances up to £50 may be made by the Commissioner to any homestead blockholder who has complied with the conditions of his lease or agreement, to assist in erecting permanent buildings on the blocks and other improvements which permanently increase the capital value thereof, such as clearing the land, fencing the same, erecting or making thereon permanent water improvements, such as dams, wells, reservoirs, watercourses, windmills, etc. The advances must not exceed half the cost to the blocker of the improvements then in good repair on the land. Advances must be repaid, with interest at 4 per cent. per annum, by twenty equal instalments, commencing twelve months from the date of advance. The whole amount may, however, be repaid at an earlier date. Failure to repay renders the holding liable to cancellation, and a grant of the land cannot issue until the advance is repaid. The Commissioner may, in case of hardship, extend the time for repayment, deferred payments bearing interest at 5 per cent. per annum. The total amount advanced up to the 30th June, 1910, was £40,028, of which £36,421 had been repaid.

(*b*) *Particulars of Homestead Blocks.* The total number of leases and agreements of which purchase had been completed to the 31st December, 1909, was 1497, comprising 22,583 acres, at a purchase price of £50,793 or an average of £2 5s. per acre, the average of each holding of which purchase was completed being 15 acres.

7. **Western Australia.**—Under the Agricultural Lands Purchase Act 1909, which repealed and consolidated the Agricultural Lands Purchase Acts 1896 to 1904, the Colonial Treasurer, with the approval of the Governor, is authorised to expend from time to time sums not exceeding in the aggregate, with the moneys expended under the Acts repealed, £400,000 on the repurchase of Crown lands near the railways, suitable for immediate cultivation.

(i.) *Acquisition of Land by the Government.* For the purpose of carrying out the provisions of the Acts, a Land Purchase Board, consisting of not more than five persons, appointed by the Governor, is constituted. The duties of this Board are to report on various matters in connection with the repurchase of any lands, such as the fair value of the land to the owner, the demand for land in the neighbourhood for agricultural settlement, and the suitability for agricultural settlement, and the distance from a railway of the land proposed to be acquired. If the report of the Board be favourable, the Minister, with the approval of the Governor, may make a contract for the acquisition of the land by surrender at the price fixed by the Board, or at any lesser price.

(ii.) *Sale of Repurchased Land.* All land repurchased may be improved prior to disposing of it and the cost of the improvements is added to the price to be paid for the land when sold. Reserves may be set aside for public purposes, roads, and town sites; and town and suburban lands may be disposed of in the same way as such lands are alienated under the provisions of the Land Acts 1898 to 1906. The remainder of the land is thrown open to selection. The maximum quantity held by one person must not exceed 1000 acres or its equivalent as prescribed by the Land Act 1906, except in special cases approved of by the Governor when the maximum may be increased to 2000 acres or its equivalent as aforesaid. No person under the age of sixteen years is eligible as a selector, nor is any person who is the beneficial owner of land exceeding 1000 acres in area held either in freehold or under any of the provisions of the Land Acts. If land thrown open to selection is not applied for, it may be put up for sale by public auction.

(iii.) *Conditions of Sale to Selectors.* The selling price of any repurchased land is ascertained by adding a sum equal to one-twentieth part of the price actually paid for the

land and for any improvements made upon it, and the total is the least price at which it may be selected. Applications must be in the prescribed form and must be accompanied by the first half-year's instalment of the purchase-money, at the rate of £3 17s. 9d. for each £100 of the selling price; on approval of the application, a lease for twenty years is issued at a rent, the half-yearly instalments of which are to be at the same rate at which the first instalment was paid. The improvements required are the same as those under residential or non-residential conditional purchase, but any improvements charged for by the State are considered as part of the expenditure required. No improvements are required to the value of more than £1 per acre under residence conditions or £1 10s. under non-residence conditions, notwithstanding that the price of the land be at a higher rate. Improvements must be made to the value of one-fifth of the purchase-money every two years of the first ten years of the lease. One-half of the land must be fenced within the first five years and the whole within ten years. Loans may be granted to selectors under the provisions of the Agricultural Bank Acts.

(iv.) *Areas Acquired and Selected, 1901 to 1910.* The transactions conducted under the provisions of the Agricultural Lands Purchase Acts are shewn for each year since 1901 in the subjoined table :—

WESTERN AUSTRALIA.—CLOSER SETTLEMENT, 1901 to 1910.*

Year.	Total Area Acquired.	Total Purchase-money.	Roads, Reserves, etc.	Area available for Selection.	Area Selected during the Year.	Total Area occupied to Date.	Balance of Area available for Selection.	Total Revenue received to Date.
	Acres.	£	Acres.	Acres.	Acres.	Acres.	Acres.	£
1901 ...	46,624	52,764	1,459	45,165	4,295	37,235	7,929	14,451
1902 ...	55,439	60,514	1,712	53,727	11,540	48,616	5,111	23,538
1903 ...	72,372	73,395	2,665	69,707	16,232	65,368	4,339	29,815
1904* ...	131,283	82,580	4,734	126,549	42,305	105,106	21,443	37,371
1905-6*	165,945	100,811	9,009	156,936	24,933	139,553	17,383	52,445
1906-7 ...	170,881	109,373	8,624	162,257	11,673	147,817	9,504	65,420
1907-8 ...	170,881	109,373	8,652	162,229	8,201	155,436	6,793	82,030
1908-9 ...	215,822	131,373	11,142	204,680	30,950	189,520	15,531	94,438
1909-10	249,522	158,041	10,757	228,823	25,134	213,416	15,407	111,125

* Since the year 1904 the figures are given as up to the 30th June instead of the 31st December; 1905 figures are therefore omitted.

On the 30th June, 1910, the total expenditure exclusive of purchase-money but including interest was £50,049, which left a balance of £61,076. At the same date the amount invested as sinking fund was £60,698. During the year 1909-10, three properties, namely those at Oakabella, Narra Tarra, and Kojunup, having a total area of 78,591 acres, were thrown open to settlement.

(v.) *Working Men's Blocks.* Any person not already holding land within the State is entitled to obtain a lease of lands which have been surveyed and thrown open for selection as working men's blocks. The maximum area that may be selected by one person is, if within any town or goldfield, half an acre, or five acres elsewhere. The price is not less than twenty shillings per acre, payable in ten years by half-yearly instalments. The application must be in the prescribed form and must be accompanied by the first instalment of the purchase-money and a lease fee of ten shillings. The selector must take personal possession within three months, and must reside upon the land for nine months in each of the first five years, but residence by the wife, parent, or child over sixteen years of age, may be accepted. Within three years the land must be fenced with a great and small stock-proof fence, and within five years an amount equal to double the purchase-money must be expended upon prescribed improvements, in addition to the cost of the exterior fencing. One-half the cost of any house may be allowed towards the improvements required. At the expiration of the lease, or at any time after five years from the date of the commencement of the lease, upon compliance with all conditions and upon payment of the full purchase-money and fee, a Crown grant will be issued. No

person who has once held a working man's block is allowed to select another, except under very special circumstances.

The following table shews the number and area of accepted applications for working men's blocks during each year, as well as the total number and area in existence at the end of the year 1901 and for each year from 1904 to 1910, inclusive:—

WESTERN AUSTRALIA.—PARTICULARS OF WORKING MEN'S BLOCKS, 1901 to 1910.

Year	1901.	1904.	1905.	1906.[1]	1907.[1]	1908.[1]	1909.[1]	1910.[1]
NUMBER AND AREA OF ACCEPTED APPLICATIONS DURING YEAR.								
Number	2	196	45	37	201	91	88	122
Area in Acres	6	154	106	104	149	131	189	148
NUMBER AND AREA OF BLOCKS OCCUPIED AT END OF YEAR.								
Number	7	228	211	229	401	387	408	440
Area in Acres	31	273	333	393	489	537	667	719

1. For financial year ended the 30th June.

During the years 1907 to 1910 residential blocks on the goldfields were made available as workingmen's blocks, instead of under residential lease, as before.

8. **Tasmania.**—The principles of closer settlement were not introduced into Tasmania until the Closer Settlement Act of 1906 was passed. Under this Act, which was amended in 1908, power is given to the Minister for Lands, on the recommendation of the Closer Settlement Board, to purchase by agreement private land in any part of Tasmania for the purpose of closer settlement, and also to deal with and dispose of any unoccupied Crown land for the same purpose. Repurchased lands are to be paid for at the option of the owner by debentures, stock, or money, which may be raised by the Treasurer up to an amount not exceeding £50,000 in each financial year, provided that the total amount so raised may not exceed £250,000. An important amending Bill was passed by the House of Assembly in August, 1910. This Bill provides for the compulsory acquisition of private lands exceeding £8000 in unimproved value.

(i.) *Lease of Allotments.* Lands so bought under the Act are subdivided into farm allotments of a suitable size—not exceeding £1500 in value—and are disposed of by way of lease for ninety-nine years. The capital value of each allotment is fixed by the Closer Settlement Board, and the rental is determined by the Board at a rate not exceeding 5 per cent. per annum on the capital value of the land. In the case of the Cheshunt Estate, which has recently been subdivided for disposal under the Act, the rent was fixed at the rate of 4 per cent. on the capital value. Although the allotments are in the first place leased, any lessee, after the expiration of ten years of the term of his lease, may acquire and purchase the land leased to him, provided that he does not then hold land (exclusive of the land leased under the Act) of a value exceeding £1500, and that he has duly complied with the terms and conditions imposed by the Act, regulations, and his lease. At the expiration of five years from the date of lease, a lessee may dispose of his interest to any eligible person, the consent of the Board being first obtained. Under the

Amendment Act of 1908 the Minister is authorised to lease any allotment of land exceeding £1500, but not exceeding £4000 in value, exclusive of buildings. Any land acquired for the purposes of closer settlement not suitable for leasing may be sold by auction or private contract for cash or on credit.

(ii.) *Improvements.* A lessee must improve his holding to a value equal to 2½ per cent. on the capital value of the land in each of the first ten years of the term of his lease, and he must, within two years of the date of the lease, personally reside on his allotment during at least eight months of each of the following nine years.

(iii.) *Qualifications of Lessees.* Persons who apply for land under the provisions of the above Act must not be less than eighteen years of age, and those applicants who are landless have preference over those who are not. A person is deemed to be landless, if, at the time of making his application, he does not hold, under any tenure, such area of land as is, in the opinion of the Board, sufficient for the maintenance of himself and his family (if any). In the case of husband and wife, unless each of them is landless, neither of them is deemed to be landless. Only one allotment is granted to one person.

(iv.) *Advances to Settlers.* Under the Act provision is also made for advances to lessees, in aid of the cost of fencing the allotments and building dwelling-houses thereon; the total advance to any one lessee must not exceed one-fifth of the capital value of such lessee's allotment, and must not exceed pound for pound the sum expended by him in fencing and building. Such advances must be repaid, together with interest at 5 per cent., in equal half-yearly instalments.

(v.) *Special Sales.* The fee-simple of land acquired may be disposed of by sale on the recommendation of the Board as sites for churches, public halls, dairy factories, fruit-preserving factories, mills, or creameries. The area sold may not exceed one acre in the case of a church or public hall, or five acres in other cases.

(vi.) *Areas Acquired and Selected.* Up to the 30th June, 1910, six areas, viz., Cheshunt, Mount Pleasant, Forester, Isandula, Brinktop and Frogmore had been opened up for closer settlement. Particulars are given in the following statement:—

TASMANIA.—CLOSER SETTLEMENT, 1907 to 1910.

Year.	Number of Farms made Available.	Number of Farms Allotted.	Area of Farms Allotted.	Rental of Farms Allotted.	Total Area Purchased.
			Acres.	£	Acres.
1907	61	54	10,365	1,923	13,397
1908	28	26	8,191	634	11,780
1909	49	45	9,117	789	7,902
1910	9	15	1,872	539	1,369
Total	147	140	29,545	3,885	34,448

The total purchase-money paid by the Government up to the 30th June, 1910, was £98,142.

§ 9. Occupation of Crown Lands under Leases and Licenses Issued by Mines Departments.

1. **Introduction.**—Leases and licenses for the occupation of Crown lands for mining and other purposes are issued by the Mines Departments in all the States. Such leases and licenses may be issued with respect to all Crown lands, whether otherwise unoccupied or whether occupied also under leases and licenses issued by the Lands Departments. Certain Crown lands, such as reserves, etc., are, however, subject to special conditions.

(i.) *Mining on Private Lands.* Certain of the Crown lands of the several States have been alienated from time to time, subject to various reservations in respect of gold and other minerals which might afterwards be found therein. Other lands have been alienated without such reservation, but as the mineral gold does not pass from the Crown unless by express conveyance, it has remained the property of the State on all alienated lands. All lands alienated or in process of alienation are open to mining for gold, but to mining for other minerals, those lands only are open in respect of which the rights are reserved in the grants. There are, however, generally certain reservations, such as those with reference to town or village lands and lands which have been built on or are used for special purposes. The working of minerals on private lands is regulated in the several States either by special Acts or by special provisions of the Acts relating to mining.

(ii.) *Leases and Licenses Issued and Total Areas of Crown Lands Occupied, 1901 to 1909.* The following tables shew the total areas of Crown lands for which leases and licenses for mining purposes were issued in each State during each year from 1901 to 1909 inclusive, and also the total areas of Crown lands occupied for mining purposes at the end of each year during the same period:—

CROWN LANDS, LEASES AND LICENSES FOR MINING PURPOSES, 1901 to 1909.

Particulars.	N.S.W.	Victoria.[1]	Qld.[2]	S. Aust.[3]	W. Aust.	Tas.	Cwlth.
AREAS FOR WHICH LEASES AND LICENSES ISSUED.							
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901	50,349	...	55,698	93,985	37,593	18,125	255,750
1902	46,017	58,376	69,172	84,488	54,473	13,932	326,458
1903	40,111	46,909	81,970	762,225	75,012	11,918	1,018,145
1904	34,308	38,287	40,876	100,600	49,646	11,859	275,576
1905	64,593	45,845	17,373	102,154	55,757	8,964	294,686
1906	27,164	84,720	25,490	170,260	41,443	19,415	368,492
1907	96,159	67,048	25,333	136,312	51,514	31,255	407,621
1908	81,418	42,716	35,834	69,202	57,093	20,546	306,809
1909	72,696	36,114	43,591	49,135	55,133	20,414	277,083
TOTAL AREA OCCUPIED AT END OF YEAR.							
1901	134,209	Not available.	124,182	14,140	66,682	50,362	[4] 389,575
1902	131,690		143,861	103,334	115,703	47,692	542,280
1903	127,514		163,792	793,583	102,919	45,298	1,233,106
1904	124,773		111,180	130,281	121,439	44,341	532,014
1905	147,074		102,952	128,045	116,390	45,075	539,536
1906	134,723		112,013	213,492	110,670	53,122	624,020
1907	183,916		123,321	170,204	117,361	79,163	673,965
1908	218,931		140,735	100,387	130,970	56,693	647,716
1909	236,265		147,010	84,293	128,129	55,819	651,516

1. Including private lands, leases, and water right licenses only. 2. Exclusive of lands held under miners' rights only, amounting in 1908 to approximately 27,500 acres. 3. Exclusive of miners' rights. 4. Excluding Victoria.

The increase in the area held during 1903 is due to the unusually large number of search licenses issued in South Australia during that year, no less than 466 being registered with areas varying from 640 to 3200 acres each.

2. **New South Wales.**—Under the provisions of the Mining Act 1906 and the regulations made thereunder, Crown lands may be occupied for mining or other purposes by virtue of (i.) miners' rights; (ii.) business licenses; (iii.) authorities to prospect; or (iv.) leases.

(i.) *Miners' Rights.* A miners' right may be issued for any term not less than six months and not exceeding twenty years from the date of issue, at a fee calculated at the rate of two shillings and sixpence for every half-year of the term. The holder is entitled to take possession of and exclusively occupy for mining purposes Crown lands not expressly exempted from such occupation. Areas so occupied are styled tenements, which are divided into nine classes, viz.:—(*a*) prospecting areas; (*b*) dams or reservoirs; (*c*) roads; (*d*) claims; (*e*) races; (*f*) machinery areas; (*g*) tramways; (*h*) water rights; and (*i*) tunnel sites. Any holder of a miner's right may occupy one tenement of any or each of the foregoing classes, but for every additional tenement of the same class he must hold an additional miner's right. The holder of a miner's right may, in addition to the above, occupy a residence area not exceeding one-quarter acre within the boundaries of a town or village, or two acres outside such boundaries.

(ii.) *Business Licenses.* A business license may be issued for any term not less than six months and not exceeding twenty years at a fee calculated at the rate of ten shillings for every half-year of the term. It entitles the holder to occupy as a business area not more than one-quarter acre within the boundaries of a town or village, or one acre outside such boundaries.

(iii.) *Authorities to Prospect.* Under the Mining Act 1906 the Minister for Mines may grant to the holder of a miner's right an authority to prospect upon any area of Crown lands, whether exempted from ordinary occupation under a miner's right or not. These authorities are protective titles during prospecting operations only, and do not authorise mining.

(iv.) *Leases.* The Governor may grant leases of Crown lands for (*a*) mining, (*b*) mining purposes, or (*c*) dredging.

(*a*) *Mining Leases.* These leases may be either *gold-mining leases*, for which the rental is at the rate of five shillings per acre per annum, the maximum area which may be demised being twenty-five acres; *mineral leases* (other than coal or shale), for which the rental is at the rate of five shillings per acre per annum, the maximum area being eighty acres; *coal or shale leases*, for which the rental is at the rate of one shilling per acre per annum, with a royalty of sixpence per ton on all shale or large coal, and threepence per ton on all small coal raised, the maximum area being 640 acres. *Special leases* may be granted for gold or minerals, other than shale or coal, if by reason of unusual circumstances the Minister is of the opinion that it is necessary that an area in excess of the limit prescribed for ordinary leases should be leased.

(*b*) *Leases for Mining Purposes* are granted for the surface of the land and to a limited depth below the surface. Such leases do not authorise mining on the land, but are for such purposes as the construction of dams and reservoirs, tramways, buildings, and machinery.

(*c*) *Dredging Leases* may be granted for the purpose of mining for gold or any other mineral by dredging, pumping, sluicing, etc., on any Crown lands

forming the bed of any river or other suitable land. The rent is two shillings and sixpence per acre per annum, and a royalty of 1 per cent. on the value of all gold and other minerals won must be paid to the Crown. Labour and capital expenditure conditions are attached to dredging leases.

(v.) *Particulars of Leases and Licenses Issued 1909.* The following table gives particulars of leases and licenses of Crown lands issued by the Mines Department during the year 1909:—

NEW SOUTH WALES.—LEASES AND LICENSES

ISSUED BY MINES DEPARTMENT DURING YEAR 1909.

Particulars.	Act under which Issued.	Purpose for which Issued.	Area.
		To mine for—	Acres.
Leases—	Mining Act 1874 & amending Acts	Minerals other than coal ...	40
"	" " "	Coal	1,280
"	Mining Act 1906 ... "	Gold	3,047
"	" "	Minerals other than coal ...	6,368
"	" "	Coal	22,534
"	" "	Leases (mining purposes) ...	476
"	Gold & Mineral Dredging Act 1899	Gold	96
"	" " "	Minerals other than gold ...	...
"	Mining Act 1906 (Dredging) " ...	Gold	2,100
"	" " " ...	Minerals other than gold ...	533
Licenses—	Mining Act 1874 (section 28) ...	Coal and shale...	10,252
Other forms of occupancy—	Mining Act 1874 & amending Acts	Sites for dams, machinery, etc.	488
	Mining Act 1906	Authorities to prospect	25,482
Total	—	—	72,696

It may be remarked that the Mining Act 1874, has now been repealed, so that no further authorities will be issued under that Act.

(vi.) *Leases and Licenses Issued and Areas Occupied, 1901 to 1909.*—The following table gives particulars of the areas of Crown lands for which leases and licenses were issued by the Mines Department during each year, and of the total areas of Crown lands occupied under such leases and licenses at the end of the year 1901 and from 1905 to 1909, inclusive:—

NEW SOUTH WALES.—LEASES AND LICENSES

ISSUED BY MINES DEPARTMENT, 1901 TO 1909.

Purposes for which Issued or Occupied.	1901.	1905.	1906.	1907.	1908.	1909.
LEASES AND LICENSES ISSUED.						
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Gold mining	2,272	1,664	1,776	1,463	4,131	5,243
Mining for other minerals ...	47,990	62,844	25,018	93,796	37,237	41,008
Authorities to prospect	...	...	...	...	38,890	25,481
For other purposes	87	85	370	900	1,160	964
Total	50,349	64,593	27,164	96,159	81,418	72,696
TOTAL AREAS OCCUPIED.						
Gold mining	6,942	5,754	5,963	5,669	11,456	16,079
Mining for other minerals ...	126,885	140,555	127,749	176,558	192,178	190,153
Authorities to prospect	...	...	...	...	13,239	28,287
For other purposes	382	765	1,011	1,689	2,058	1,746
Total	134,209	147,074	134,723	183,916	218,931	236,265

3. **Victoria.**—Leases of Crown lands for mining and auxiliary purposes in this State are issued by the Department of Mines and Forests under the Mines Acts 1890 to 1907. Miners' rights are issued by the Treasury under the authority of the same Acts.

(i.) *Mining Leases.* These are of three kinds—(*a*) Gold-mining leases; (*b*) mineral leases; and (*c*) dredging leases. (*a*) *Gold-mining Leases* are granted for a term of fifteen years in such areas as the Minister may recommend. The annual rent is two shillings and sixpence an acre. (*b*) *Mineral Leases* are granted for a term of 15 years, the maximum area being 640 acres. The annual rent varies from one shilling to £1 per acre. (*c*) *Dredging Leases* are issued upon the recommendation of the Sludge Abatement Board and on the approval of the Minister. The annual rent is five shillings an acre.

(ii.) *Special Licenses.* Special licenses are also granted by the Department of Mines and Forests. (*a*) *Searching Licenses* are granted to search for minerals over Crown lands for a term of three months at a minimum rent of £1. (*b*) *Tailings Licenses* are issued over tailings, which have become the property of the Crown, for a term of five years at a rent of one penny per 100 cubic yards, the minimum rent being ten shillings. (*c*) *Water-right Licenses* are issued, to divert water by cutting races, etc., over Crown lands, for a term of fifteen years, at a rent fixed according to the length of race, the quantity of water diverted, and the size of the reservoir.

(iii.) *Miners' Rights, Business Licenses, and Residence Areas.* Miners' rights are issued by the Treasury Department upon payment of a fee of two shillings and sixpence, and are available for a period of twelve months. The holder is entitled to take possession for mining purposes of Crown lands, not otherwise exempted, in any mining district. Upon registration and payment of the prescribed fees the holder of a miner's right may occupy not more than one acre of Crown lands on any goldfield as a business or residence area.

Licenses of auriferous lands not for mining purposes may be issued by the Lands Department. (§ 7, 3 iv.)

(iv.) *Leases and Licenses Issued and Areas Occupied for Mining.* Particulars of leases and licenses for mining purposes of Crown lands alone are not available, the official returns including private lands also. During the year 1909 the number of mining leases, licenses, etc., issued was 510, covering an area of 36,114 acres; the rent, fees, etc., received amounted to £2559. No particulars are available as to the total area of either Crown or private lands occupied for mining purposes.

4. **Queensland.**—The occupation of Crown lands for mining purposes in this State is regulated by the Mining Acts 1898 to 1902. Under these Acts the Department of Mines is authorised to issue—(i.) Miners' rights; (ii.) mining leases; (iii.) coal-mining leases and licenses; and (iv.) miners' homestead leases.

(i.) *Miners' Rights.* The foundation of title under a miner's right is prior appropriation, and the permanency of any such title depends upon compliance by the occupier with certain prescribed conditions of use and working. The ground occupied under a miner's right is known as a "claim," which term may include an area taken up for purposes auxiliary to the actual operation of mining, such as machine areas. Water rights and residence areas do not come within the definition of "claim," being licenses which may be granted or refused. The forfeiture of a claim on account of non-compliance with the prescribed conditions may be decreed by the Warden on the application of any holder of a miner's right. The forfeiture of water rights or of residence areas may be declared only by the Crown, who alone can challenge the title of the occupier.

(ii.) *Mining Leases.* These leases are divided into two classes—(*a*) Gold-mining leases, and (*b*) mineral leases. Both classes contain certain covenants as to rent and the employment of labour and other matters. Special leases may be granted for auxiliary purposes, such as constructing tramways, erecting buildings, cutting water-races, etc. (*a*) *Gold-mining Leases.* The maximum area is fifty acres, the term twenty-one years, renewable for a further term of like duration, and the annual rent is £1 an acre. (*b*) *Mineral Leases.* The maximum area is 160 acres (except for coal, as mentioned hereinafter), the term twenty-one years, renewable for a like period, and the annual rent is ten shillings an acre.

(iii.) *Coal-mining Leases and Licenses.* Mineral leases for coal may be granted for a term of twenty-one years at an annual rent of sixpence an acre, together with a royalty of threepence per ton of coal raised during the first ten years of the lease and of sixpence per ton during the remainder of the term. Special concessions may be granted to discoverers of payable seams of coal. Licenses to occupy not more than 640 acres may be granted to any person desiring to prospect Crown lands for coal upon payment of sixpence for every acre comprised in the application.

(iv.) *Miners' Homestead Leases.* These leases are issued to holders of miners' rights who reside on gold or mineral fields, for the purpose of residence or carrying on business, and range in area from one to eighty acres, in accordance with the proximity to a proclaimed township. The rent ranges from sixpence to five shillings an acre. In the case of homesteads situated outside the limits of a township, after thirty years' rent has been paid the rent ceases to be payable, and in lieu thereof the rent shall be one shilling, if demanded.

(v.) *Particulars of Leases and Licenses Issued, 1909.* The subjoined table gives particulars of the leases and licenses of Crown lands issued for mining purposes during the year 1909:—

QUEENSLAND.—MINING LEASES AND LICENSES ISSUED, 1909.

Lease or License.	Mining Leases.				Miners' Homestead Leases.	Coal Prospecting Licenses.	Miscellaneous Rights & Licenses.
Purpose for which issued	To mine for gold	To mine for minerals other than gold	Tramways	Buildings and machinery	Residence, business, etc.	To prospect for coal	Mining, residence, etc.
Area in acres...	1,668	2,835	31	12	8,932	30,113	*26,000

* Approximate.

(vi.) *Particulars of Areas Occupied, 1901 to 1909.* The following table shews the areas for which leases and licenses of Crown lands were issued during each year, and the total area occupied at the end of the year 1901 and from 1905 to 1909 inclusive.

The particulars given are exclusive of miners' rights.

QUEENSLAND.—LEASES AND LICENSES.

Particulars.	1901.	1905.	1906.	1907.	1908.	1909.
***LEASES AND LICENSES ISSUED DURING YEAR.**						
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Gold mining	3,581	1,315	2,207	2,333	1,800	1,668
Mining for other minerals ...	7,142	2,415	10,998	7,598	5,004	2,878
For other purposes	44,975	13,643	12,285	15,402	29,030	39,045
Total	55,698	17,373	25,490	25,333	35,834	43,591
*** TOTAL AREA OCCUPIED AT END OF YEAR.**						
Gold mining	11,296	10,093	10,067	10,562	8,860	8,590
Mining for other minerals ...	23,113	24,699	28,897	33,021	27,691	20,292
For other purposes	89,773	68,160	73,049	79,738	104,184	118,128
Total	124,182	102,952	112,013	123,321	140,735	147,010

* Exclusive of lands held under miners' rights only.

5. **South Australia.**—In this State leases and licenses for mining purposes are issued by the Department of Mines under the authority of the Mining Act 1893, as amended in 1900. Under these Acts mining and prospecting are permitted in virtue of (i) miner's rights; (ii.) mining leases; (iii.) coal or oil leases; and (iv.) miscellaneous leases, and in addition occupation of Crown lands is permitted by virtue of (v.) business claims, and (vi.) occupation licenses.

(i.) *Miners' Rights.* These rights are issued for a period of one year upon payment of five shillings. The holder is authorised to prospect for any mineral or oil, and to peg out a claim in the prescribed manner on any Crown lands. Under the Amendment Act of 1900, special licenses to search, on specific mineral lands not exceeding five square miles in extent, may be granted for (*a*) precious stones; (*b*) mineral phosphates; (*c*) oil; and (*d*) rare metals, minerals, and earths, the mining for which has not proved payable in any portion of the State.

(ii.) *Mining Leases.* These leases are of two classes—(*a*) Gold leases and (*b*) mineral leases. (*a*) *Gold Leases* may be issued for a term not exceeding forty-two years to holders of miners' rights at an annual rent of one shilling an acre. The maximum area which may be so leased is twenty acres. (*b*) *Mineral Leases* may be issued to holders of miners' rights for lands not comprised in a goldfield. The area leased may not exceed forty acres, nor the term forty-two years. The annual rent is one shilling an acre, together with a royalty of sixpence in the pound on the net profits.

(iii.) *Coal or Oil Leases.* These leases are issued to holders of miners' rights for Crown lands not comprised in goldfields. The maximum area is 640 acres, and the maximum term forty-two years. The rent and conditions are as prescribed. In addition to the rent a royalty of sixpence in the pound on the net profits must be paid.

(iv.) *Miscellaneous Leases.* Leases for any term not exceeding forty-two years may be granted to holders of miners' rights on the prescribed terms and conditions (*a*) for manufacturing or obtaining salt or gypsum; (*b*) as sites for smelting or mining works. The maximum area, if the land leased is on a water frontage, is twenty-one acres. A royalty of sixpence in the pound on the net profits must be paid.

(v.) *Business Claims.* Business licenses are granted on payment at the rate of ten shillings for six months, entitling the holder to peg out and occupy for business and residential purposes a claim not exceeding a quarter of an acre in extent, if within a township, or one acre on other lands.

(vi.) *Occupation Licenses.* Licenses are granted authorising the holder to occupy, for purposes of residence and cultivation, any Crown lands not exceeding half an acre in extent for a term of fourteen years at an annual rent not exceeding two shillings an acre.

(vii.) *Particulars of Leases and Licenses, 1909.* The following table gives particulars of leases and licenses of Crown lands issued by the Mines Department during the year 1909:—

SOUTH AUSTRALIA.—LEASES AND LICENSES.

ISSUED BY THE MINES DEPARTMENT DURING YEAR 1909.

Particulars.	Act under which Issued.	Purpose for which Issued.	Area.
			Acres.
Leases	Mining Act 1893	To mine for— Gold and other metals and miner'ls	709
Mineral claims ...	" " "	" " " " "	5,446
Licenses ...	Mining Act Amendment Act 1900	To search for precious stones, mineral phosphates, oil, rare metals, minerals, and earths, the mining for which has not proved payable in any portion of the State	38,400
Other forms of occupancy ...	Mining Act 1893	—	4,580
Total ...	—	—	49,135

(viii.) *Leases and Licenses Issued and Areas Occupied, 1901 to 1909.* The following table gives particulars of the areas of Crown lands for which leases and licenses were issued by the Mines Department during each year, and of the total area of Crown lands occupied under such leases and licenses at the end of the year 1901 and from 1905 to 1909 inclusive:—

SOUTH AUSTRALIA.—LEASES AND LICENSES.

ISSUED BY MINES DEPARTMENT, 1901 TO 1909.

Particulars.	1901.	1905.	1906.	1907.	1908.	1909.
LEASES AND LICENSES ISSUED.*						
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Gold mining	1,377	100	1,380	370	306	334
Mining for other minerals ...	92,587	102,040	168,875	135,897	68,896	48,799
For other purposes	21	14	5	45	...	2
Total	93,985	102,154	170,260	136,312	69,202	49,135

* Exclusive of miners' rights.

SOUTH AUSTRALIA.—LEASES AND LICENSES—(Continued.)

Particulars.	1901.	1905.	1906.	1907.	1908.	1909.
TOTAL AREAS OCCUPIED.*						
Gold mining	14,140	5,295	10,171	7,952	2,490	2,374
Mining for other minerals ...	...	122,750	203,321	162,113	97,780	81,811
For other purposes	...	...	...	139	117	108
Total	14,140	128,045	213,492	170,204	100,387	84,293

* Exclusive of miners' rights.

The following table shews the total area occupied (exclusive of miners' rights) at the end of the year 1909, classified according to the nature of the holding:—

SOUTH AUSTRALIA.—TOTAL AREA HELD UNDER MINING ACTS, 1909.

Nature of Holding.	Number.	Area.	Nature of Holding.	Number.	Area.
		Acres.			Acres.
Mineral leases ...	303	15,542	Search licenses ...	38	39,680
Gold leases	84	1,546	Coal and oil claims ...	11	5,947
Gold dredging leases ...	6	721	Gold claims	78	107
Miscellaneous leases ...	42	7,404			
Mineral claims ...	393	13,238			
Occupation licenses ...	219	108	Total	1,174	84,293

6. **Western Australia.**—The issue of leases and licenses by the Mines Department is regulated by the Mining Act 1904. Under this Act Crown lands may be occupied by virtue of (i.) Miners' rights; (ii.) mining leases; and (iii.) miners' homestead leases.

(i.) *Miners' Rights.* Any holder of a miner's right may take up and occupy ground, subject to the approval of the Warden, for the following purposes:—Prospecting for any minerals; claims, water rights, residence and business areas, and machinery, tailings, washing, or market garden areas. Lands may be occupied by the holder of a miner's right for the purpose of mining for alluvial gold without registration, the only restriction being that the occupier must peg out his holding according to the prescribed regulations.

(ii.) *Mining Leases.* These leases are granted for mining and auxiliary purposes, and are of three descriptions, viz.:—(*a*) Gold-mining leases; (*b*) mineral leases; and (*c*) coal leases. (*a*) *Gold-mining Leases.* The maximum area is twenty-four acres, except in the case of a mine which has already been worked and abandoned, is excessively wet, or requires costly appliances, when the maximum area is forty-eight acres. (*b*) *Mineral Leases.* The maximum area is forty-eight acres, except under the special circumstances referred to in the case of gold-mining leases, when the maximum area is ninety-six acres. (*c*) *Coal Leases.* The maximum area is 320 acres, but special leases of larger areas may be granted to the discoverer of a payable seam.

(iii.) *Miners' Homestead Leases.* These leases are granted for agricultural purposes on land within goldfields. The area is restricted to twenty acres, if within two miles of a township, and if beyond that distance to 500 acres. Improvement conditions are imposed.

(iv.) *Particulars of Leases and Licenses Issued, 1909.* The following table gives particulars of mining leases and licenses of Crown lands issued during 1909 :—

WESTERN AUSTRALIA.—MINING LEASES AND LICENSES ISSUED, 1909.*

Particulars.	Gold-Mining.	Minerals other than Gold.	Miners' Homesteads.	Miscellaneous.	Total.
	Acres.	Acres.	Acres.	Acres.	Acres.
Leases	11,708	2,049	7,675	241	21,673
Licenses ...	20,384	12,794	...	282	33,460

* Exclusive of miners' rights.

(v.) *Particulars of Areas Occupied, 1901 to 1909.* The following table shews the areas for which leases and licenses of Crown lands were issued during each year, and the total area occupied at the end of the year 1901, and from 1905 to 1909 inclusive :—

WESTERN AUSTRALIA.—LEASES AND LICENSES ISSUED BY MINES DEPARTMENT, 1901 TO 1909.

Particulars.	1901.	1905.	1906.	1907.	1908.	1909.
LEASES AND LICENSES ISSUED DURING YEAR.*						
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Gold mining	17,454	26,678	28,572	28,050	26,898	32,092
Mining for other minerals ...	19,281	23,856	9,787	15,985	22,293	14,843
For other purposes	858	5,223	3,084	7,479	7,902	8,198
Total	37,593	55,757	41,443	51,514	57,093	55,133
TOTAL AREA OCCUPIED AT END OF YEAR.*						
Gold mining	40,525	45,995	48,398	46,374	40,591	41,521
Mining for other minerals ...	14,091	44,561	36,019	41,470	55,244	45,229
For other purposes	12,066	25,834	26,253	29,517	35,135	41,379
Total	66,682	116,390	110,670	117,361	130,970	128,129

* Exclusive of miners' rights.

7. **Tasmania.**—Under the provisions of the Mining Act 1905, Crown lands in this State may be occupied for mining and auxiliary purposes by virtue of (i.) prospectors' licenses; (ii.) miners' rights; (iii.) mining leases; and (iv.) miscellaneous licenses. Business and residence licenses within mining areas may be issued by the Lands Department. (See § 7, 8 iv.)

(i.) *Prospectors' Licenses.* These licenses are granted to the end of the calendar year in which they are applied for, upon payment of the sum of ten shillings if applied for before the 30th June, or five shillings if after that date. They confer the right to prospect upon prescribed Crown lands, and any discoveries made may be protected in the prescribed manner.

(ii.) *Miners' Rights.* These rights are also issued each year upon payment of five shillings if applied for before the 30th June, or of two shillings and sixpence after that date. They confer the right to occupy specified Crown lands and to mine thereon.

(iii.) *Mining Leases.* Mining leases are of three kinds—(*a*) gold-mining leases; (*b*) mineral leases; and (*c*) miscellaneous leases. (*a*) *Gold-mining Leases* are granted for a term not exceeding twenty-one years at an annual rent of £1 an acre. The maximum area which may be so leased is forty acres. The lessee has the exclusive right to mine for gold and other minerals on the land demised. (*b*) *Mineral Leases* are issued for mining for minerals other than gold on areas not exceeding eighty acres for a term of not more than twenty-one years, and at an annual rent of five shillings an acre. Leases to mine for coal, shale, slate, freestone, or limestone, may be issued for areas not exceeding 320 acres at an annual rent of two shillings and sixpence an acre. (*c*) *Miscellaneous Leases.* The Minister may grant leases for mining purposes, for a term not exceeding ten years, of the bed or banks of any river flowing through Crown lands, at a rent of five shillings an acre. The area leased may not exceed forty chains in length by five chains on either side from the centre of the river. Special leases may be granted by the Governor upon resolutions assenting thereto passed by both Houses of Parliament.

(iv.) *Miscellaneous Licenses.* Licenses granting easements for various purposes may be issued, for a term not exceeding twenty-one years, to persons holding mining leases or miner's right for the more advantageous working of the land occupied.

(v.) *Particulars of Leases and Licenses Issued, 1909.* The following table shews particulars of leases and licenses of Crown lands, exclusive of prospectors' licenses and miners' rights, issued by the Mines Department during the year 1909 : —

TASMANIA.—LEASES AND LICENSES

ISSUED BY THE MINES DEPARTMENT DURING 1909.[1]

Particulars.		Act under which Issued.	Purpose for which Issued.	Area.
Leases—			To mine for—	Acres
1	...	The Mining Act 1905 ...	Barium sulphate ...	80
10	...	" " ...	Coal	2,280
90	...	" " ...	Copper	4,417
57	...	" " ...	Gold	998
1	...	" " ...	Iron	19
1	...	" " ...	Limestone	20
74	...	" " ...	Minerals	5,211
1	...	" " ...	Nickel	80
6	...	" " ...	Phosphate rock ...	78
24	...	" " ...	Silver lead	1,346
1	...	" " ...	Scheelite	80
5	...	" " ...	Slate	2,017
135	...	" " ...	Tin	3,339
Licenses—				
2	...	" " ...	Machinery sites... ...	5
17	...	" " ...	Mining easements ...	126
7	...	" " ...	Dredging claims ...	147
84	...	" " ...	Dam sites	171
Total 516	...	—	—	20,414

1. Exclusive of prospectors' licenses and miners' rights, which are issued by officers in different districts throughout the State, and as to which particulars are not available.

(vi.) *Leases and Licenses Issued and Areas Occupied, 1901 to 1909.* The following tables give particulars of the areas of Crown lands for which leases and licenses (exclusive of prospectors' licenses and miners' rights) were issued during each year, and of the total area of Crown lands occupied under such leases and licenses at the end of the year 1901 and from 1905 to 1909, inclusive :—

TASMANIA.—LEASES AND LICENSES

ISSUED BY MINES DEPARTMENT, 1901 TO 1909.*

Particulars.	1901.	1906.	1907.	1908.	1909.
LEASES AND LICENSES ISSUED.*					
	Acres.	Acres.	Acres.	Acres.	Acres.
Gold mining	1,067	543	459	1,056	946	998
Mining for other minerals	17,058	8,421	18,956	29,188	19,137	19,114
For other purposes	—	—	—	1,011	463	302
Total	18,125	8,964	19,415	31,255	20,546	20,414
TOTAL AREAS OCCUPIED.*					
Gold mining	3,394	2,087	1,836	2,671	1,344	1,265
Mining for other minerals	46,968	41,510	49,061	73,009	52,844	52,939
For other purposes	—	1,478	2,225	3,483	2,505	1,615
Total	50,362	45,075	53,122	79,163	56,693	55,819

* See note to preceding table.

§ 10. Resumption by Crown of Alienated Lands.

1. **General.**—Under various Acts alienated lands may be compulsorily resumed by the Crown in the several States for certain purposes, generally connected with works of a public nature. Resumptions for closer settlement purposes have already been referred to (see § 8, above). In most of the States there are Lands Clauses or similar Acts providing the machinery, and indicating the procedure to be adopted in assessing the compensation to be paid by the Crown to private owners in cases where the parties have failed to agree as to the amount to be paid. The provisions of these Acts are generally incorporated in the special Acts specifying the purposes for which alienated lands may be resumed. Lands leased for pastoral purposes may generally be resumed by the Crown on short notice. The lessee is ordinarily entitled to compensation for land resumed, for loss or depreciation in value of the lease caused by such resumption, and for improvements.

(*a*) *New South Wales.* Alienated lands may be recovered by the Crown for authorised works and certain public purposes under the provisions of the Public Works Act 1900, and in other cases may be acquired by the Crown by purchase, gift, or surrender under Executive authority. Alienated lands required for public roads may be resumed under the Public Roads Act 1902, and if containing gold may be resumed for mining under Section 72 of the Mining Act 1906. Lands dedicated or granted by the Crown for public purposes may be resumed under Section 105 of the Crown Lands Act 1884, Section 41 of the Crown Lands Act 1889, and Section 1 of the Public Trusts Act 1897. Surrender and exchange of lands alienated or in process of alienation may be carried out under Section 47 of the Crown Lands Act 1895.

(*b*) *Victoria.* In Victoria lands may be resumed in accordance with the provisions of the Lands Compensation Act 1890, the Public Works Act 1890, the Railways Acts, the Land Act 1901, the Local Government Act 1903, the Water Act 1905, the Vacant Unclaimed Lands Act 1906, and the Forests Act 1907.

(*c*) *Queensland.* In this State alienated lands may be resumed under the provisions of the Public Works Land Resumption Act 1906, for any of the purposes specified in section 4 of that Act.

(*d*) *South Australia.* In this State the principal Acts under which land is repurchased for public works are the Railways Commissioners Act 1887, the Water Conservations Acts 1886, 1889, and 1900, the Waterworks Act 1882, and the Sewers Act 1878.

(*e*) *Western Australia.* In Western Australia private lands may be resumed under the provisions of the Land Act 1898, the Roads Act 1902, and the Public Works Act 1902.

(*f*) *Tasmania.* In the greatest number of cases private lands have been resumed in this State for the purpose of roads by agreement under the Lands Vesting Act 1894 and the Roads Acts, which were to a large extent repealed and consolidated by the Local Government Act 1906. In case of the owners failing to agree as to price, the land is acquired under the Lands Clauses Act 1857, incorporated in the Public Works and the Crown Land Acts. The Lands Resumption Acts 1891 and 1892 provide for the compulsory acquisition of land without waiting for the usual formalities. Under that Act a notification may be given to the owner that the land is required; after the expiration of thirty days the land may be resumed by notification in the *Gazette*, the amount of purchase-money being afterwards decided by arbitration, as provided by the Lands Clauses Act. A Bill amending and consolidating the Land for Public Purposes Act 1884, and the Lands Resumption Acts 1891 and 1892, was passed by the House of Assembly in August, 1910.

2. **Areas Resumed, 1901 to 1909.**—The subjoined table shews, so far as particulars are available, the areas of private lands resumed, exclusive of resumptions for closer settlement purposes, in each State during each year from 1901 to 1909 inclusive:—

AREAS OF PRIVATE LANDS RESUMED BY THE CROWN

(EXCLUSIVE OF RESUMPTIONS FOR CLOSER SETTLEMENT), 1901 TO 1909.

Year.	N.S.W.	Victoria.*	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.‡
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901	7,864	52	26	†	91	120	8,153
1902	8,392	18	2	†	30	150	8,592
1903	10,275	2,787	...	†	...	160	13,222
1904	6,591	3,337	...	†	...	210	10,138
1905	6,173	2,653	...	†	...	184	9,010
1906	20,875	665	...	†	...	200	21,740
1907	10,511	1,930	76	†	...	252	12,769
1908	6,041	†	1,346	†	2,457	16	†
1909	3,020	†	122	†	†	212	†

* Exclusive of resumptions for railway purposes, which for the years 1901 to 1906, inclusive, amounted to 13,081 acres. † Not available. ‡ Exclusive of South Australia.

§ 11. Alienation and Occupation of Crown Lands in the Several States.

1. **Introduction.**— The tables given in the previous parts of this section shew separately the areas alienated, in process of alienation, and occupied under various tenures in the several States. The tables given below shew collectively the general condition of the public estate in each State, having regard to (*a*) the area alienated absolutely, which includes free grants, sales, and conditional purchases for which grants have been issued, the conditions having been complied with; (*b*) the area in process of alienation, comprising holdings for which the fee-simple has not yet been alienated, but which

are in process of sale under systems of deferred payments; (*c*) the area occupied under all descriptions of leases and licenses; and (*d*) the area unoccupied, which, ordinarily, includes roads, permanent reserves, forests, etc. In some cases, however, lands which are permanently reserved from alienation are occupied under leases and licenses, so that in such cases the areas reserved are comprised in class (*c*) and not in class (*d*). Particulars of leases and licenses of reserved areas, as distinguished from leases and licenses of other lands, are not available. It should be observed that in many cases lands occupied under leases or licenses for pastoral purposes are held on short tenures only, and could thus be made available for settlement practically whenever required.

2. **New South Wales.**—The total area of the State of New South Wales is 198,638,080 acres, of which on the 30th June, 1910, 37,999,049 acres, or nearly one-fifth were alienated absolutely, 15,460,919 acres, or about one-twelfth, were in process of alienation, 125,733,630 acres, or about three-fifths, were occupied under Lands Department, Western Land Board, or Mines Department leases and licenses, and the remaining 19,444,482 acres, or about one-tenth, were unoccupied. The next table shews the areas alienated, in process of alienation, held under leases and licenses, and unoccupied in 1901 and from 1907 to 1910.

During the year 1909-10, a total area of 1,638,492 acres became available for conditional purchase, conditional lease, conditional purchase lease, homestead selection, and settlement lease, special conditional purchase lease, and additional holdings. Of this area, 715,625 acres were made available for additional holdings only, so as to enable selectors with insufficient areas to increase their holdings, and 197,113 acres were made available for closer settlement purchase.

NEW SOUTH WALES.—ALIENATION AND OCCUPATION OF CROWN LANDS, 1901-1910.[1]

Particulars.	Area in Acres.				
	1901.	1906-7.	1907-8.	1908-9.	1909-10.
1. *Alienated.*					
Granted and sold by private tender and public auction, at prices ranging from five to twenty shillings per acre, prior to 1862	7,146,579	7,146,579	7,146,579	7,146,579	7,146,579
Sold by auction and other sales, 1862 to date ...	14,638,858	14,868,442	14,879,236	14,889,219	14,897,415
Conditionally sold, 1862 to date	4,212,189	10,264,221	11,659,869	12,848,166	13,928,053
Granted under Volunteer Land Regulations, 1867 to date	168,545	169,464	169,614	169,764	170,114
Granted for public and religious purposes ...	241,968	224,883	226,308	228,275	228,712
Homestead grants	35,385	1,247,919	1,385,415	1,501,738	1,628,176
Total area alienated	26,443,554	33,921,508	35,467,021	36,783,741	[3]37,999,049
2. *In Process of Alienation.*					
Under system of deferred payments	20,044,703	15,691,906	14,868,837	14,163,478	14,362,463
Under system of homestead selections (including leases converted, but excluding grants issued)	1,550,985	873,319	771,561	742,338	622,903
Closer settlement purchases	...	154,922	157,649	312,075	475,553
Total area in process of alienation ...	21,595,688	16,720,147	15,798,047	15,217,891	15,460,919
3. *Held under Leases and Licenses.*					
Total under Lands Department and Western Land Board	126,921,161	125,904,700	128,931,647	128,179,127	125,491,878
Mineral and auriferous leases and licenses (Mines Department)	134,209	176,593	[2]218,931	[2]211,741	[2]241,752
Total leases under all Government Departments	127,055,370	126,081,293	129,150,578	128,390,868	125,733,630
4. *Unoccupied*	23,543,468	21,915,132	18,222,434	18,245,580	19,444,482
Area of State—198,638,080 acres.					

1. The figures for 1901 are up to the 31st December, while for the other years given they are up to the 30th June. 2. On the 31st Dec., 1908. 3. Includes 495,052 acres acquired for closer settlement.

3. **Victoria.**—The total area of the State of Victoria is 56,245,760 acres, of which 23,107,613 acres, or about three-eighths, had been alienated absolutely up to the end of the year 1909; 5,358,496 acres, or about one-eleventh, were in process of alienation under deferred payments; and 16,384,395 acres were occupied under leases and licenses, while the remaining 11,395,256 acres were unoccupied. The following table shews the areas alienated and in process of alienation, together with the areas reserved, leased, and available for occupation at the end of the year 1901 and from 1905 to 1909:—

VICTORIA.—ALIENATION AND OCCUPATION OF CROWN LANDS, 1901 to 1909.

Particulars.	Area in Acres					
	1901.	1905.	1906.	1907.	1908.	1909.
1. *Alienated*	20,066,875	22,584,092	22,816,538	22,940,143	23,074,634	23,107,613
2. *In Process of Alienation*—						
Exclusive of Mallee, etc.	3,587,668	2,136,411	1,922,654	1,897,796	1,941,474	2,017,219
Mallee Lands	87,606	1,589,981	1,948,460	2,372,316	2,728,595	3,077,067
Under Closer Settlement Acts ...	...	37,996	114,691	164,561	174,812	221,565
Settlement on Lands Act 1903 ...	55,077	55,395	54,404	52,673	45,140	42,645
Total	3,730,351	3,819,783	4,040,209	4,488,346	4,890,021	5,358,496
3. *Leases and Licenses Held*—						
Under Lands Department	17,110,709	17,938,838	16,683,992	16,565,917	15,955,346	16,384,395
Under Mines Department*	...	...	...	...	...	...
4. *Unoccupied Crown Lands*	15,337,825	11,903,047	12,705,021	12,251,354	12,325,759	11,395,256

Total area of State—56,245,760 acres.

* Not available.

Crown lands in Victoria include roads, 1,679,478 acres; water reserves, 285,180 acres; agricultural colleges, etc., 155,483 acres; State forests and timber reserves (now under Forests Act 1907), 3,999,482 acres; permanent reserves for public purposes, 1,592,400 acres; reserves in the Mallee, 397,881 acres; unsold land in towns, etc., 1,600,998 acres; and other reserves (including State forest and timber reserves under the Land Acts), 927,224 acres. A Bill has been introduced in Parliament revoking permanent reserves for public purposes, in order that the areas may be dealt with as unoccupied Crown lands.

4. **Queensland.**—The total area of this State is 429,120,000 acres, of which, on the 31st December, 1909, 15,296,688 acres, or about one-twenty-eighth, were alienated absolutely; 6,806,467 acres, or about one-seventieth, were in process of alienation; 283,023,871, or about five-eighths, were occupied under leases and licenses, the remaining 123,992,974 acres being unoccupied. From 1901 to 1909 the area alienated absolutely increased by 3,040,738 acres or 15 per cent., and the area in process of alienation by 1,628,145 acres or 44 per cent.

The following table shews the area alienated absolutely, the area in process of alienation, and the area held under various forms of lease and license at the end of the year 1901 and from 1905 to 1909:—

QUEENSLAND.—ALIENATION AND OCCUPATION OF CROWN LANDS, 1901 TO 1909.

Particulars.	Area in Acres.					
	1901.	1905.	1906.	1907.	1908.	1909.
1. *Alienated Absolutely*—						
By Purchase	13,462,304	14,174,907	14,504,707	14,842,621	15,026,180	15,214,148
Without Payment	71,164	77,757	80,853	81,796	82,259	82,540
Total	13,533,468	14,252,664	14,585,560	14,924,417	15,108,439	15,296,688
2. *In Process of Alienation* ...	2,791,664	3,407,210	3,737,083	4,778,908	6,200,960	6,806,467
3. *Occupied under Leases and Licenses*—						
Runs Settled Districts	176,000	179,722,320	182,384,400	192,346,480	201,872,640	209,143,600
„ Unsettled Districts ...	222,553,760					
Occupation Licenses	35,103,600	37,085,040	39,354,240	43,138,000	40,039,040	38,062,240
Grazing Farms and Homesteads	21,793,242	22,937,960	24,961,495	28,232,332	30,888,705	35,250,197
Scrub Selections	272,946	251,549	252,603	275,621	258,208	273,102
Timber Licenses	...	...	...	*92,000	*100,000	*115,000
Leases Special Purposes ...	249	3,133	3,789	11,446	8,037	32,722
Under Mines Department ...	124,182	102,952	112,013	123,321	140,735	147,010
Total	280,023,979	240,162,954	247,068,540	264,219,200	273,307,365	283,023,871
4. *Unoccupied*	132,770,889	171,297,172	163,728,817	145,197,475	134,503,266	123,992,974

Total area of State—429,120,000 acres.

* Approximate; the area under timber licenses is constantly fluctuating.

The area open for selection (as distinguished from occupation for purely pastoral or special purposes) under every mode at the beginning of the year 1909 was 8,834,807 acres, and the area opened during the year was 5,876,020 acres, while the area withdrawn was 4,442,845 acres. The area selected was 5,956,323 acres, and the area remaining open at the end of the year was 4,311,659 acres. The area selected in 1909 exceeded even the high record of the previous year, and this result was secured by the very large area selected as grazing selections, which area was 4,623,803 acres in 1909 as compared with 3,329,978 acres in 1908. The area surveyed during 1909 was 10,351,031 acres, at a total cost of £81,664.

5. **South Australia and Northern Territory.**— The area of the State of South Australia south of lat. 26° S. is 243,244,800 acres, and of the Northern Territory, 335,116,800 acres, making a total of 578,361,600 acres. In South Australia (proper) at the end of the year 1909, there were 8,670,874 acres, or about one-twenty-eighth, alienated absolutely; 1,297,277 acres, or about one-two hundred and fortieth, were in process of alienation; 106,956,007 acres, or about three-sevenths, were occupied under leases and licenses; while the remaining 126,320,642 acres were unoccupied. The subjoined tables shew for South Australia proper and for the Northern Territory respectively the area of land alienated absolutely, and in process of alienation under deferred payments, and the area held under different forms of leases:—

SOUTH AUSTRALIA (PROPER).—ALIENATION AND OCCUPATION OF CROWN LANDS, 1901 to 1909.

Particulars.	Area in Acres.					
	1901.	1905.	1906.	1907.	1908.	1909.
1. *Alienated*—						
Sold	7,413,510	7,992,302	8,065,792	8,194,032	8,341,566	8,598,751
Granted for Public Purposes ...	121,613	121,822	121,829	122,027	122,065	72,123
Total	7,535,123	8,114,124	8,187,621	8,316,059	8,463,631	8,670,874
2. *In Process of Alienation*—	553,774	455,381	759,337	1,134,424	1,195,550	1,297,277
3. *Held under Lease and License*—						
Right of Purchase	5,639,519	4,898,422	4,724,954	4,579,418	4,424,814	4,232,009
Perpetual	7,115,782	10,573,154	11,445,372	12,568,576	13,269,290	14,088,223
Pastoral	68,916,125	76,402,950	76,685,510	79,388,240	83,009,650	87,038,450
Other Leases and Licenses ...	3,905,729	2,273,383	2,113,718	1,985,566	1,812,959	1,513,032
*Mining „ „	14,140	128,045	213,492	170,204	100,387	84,293
Total	85,591,295	94,275,954	95,183,046	98,692,304	102,617,100	106,956,007
4. *Total Occupied*	93,680,192	102,845,459	104,130,004	108,142,787	112,276,281	116,924,158
5. *Area Unoccupied*	149,564,608	140,399,341	139,114,796	135,102,013	130,968,519	126,320,642

Total area of State (proper), south of lat. 26° S.—243,244,800 acres.

* Exclusive of miners' rights.

In the Northern Territory at the end of the year 1909, there were 473,809 acres, or only about one one-seven-hundredth part alienated absolutely: 96,077,714 acres, or nearly one-third, were held under leases and licenses, while the remaining 238,565,277 acres, or about two-thirds, were unoccupied.

NORTHERN TERRITORY.—ALIENATION AND OCCUPATION OF CROWN LANDS, 1901 TO 1909.

Particulars.	Area in Acres.					
	1901.	1905.	1906.	1907.	1908.	1909.
1. *Alienated*—						
Sold	473,230	473,231	473,232	473,232	473,761	473,761
Granted for Public Purposes ...	48	48	48	48	48	48
Total Alienated	473,278	473,279	473,280	473,280	473,809	473,809
2. *Leased*—						
Right of Purchase	1,067	2,087	2,397	2,771	2,931	5,224
Pastoral	111,476,240	102,030,240	108,347,680	105,918,880	102,123,040	95,559,840
Other Leases	1,176,981	1,248,019	1,376,010	1,347,858	1,293,457	512,650
Total Leased	112,654,288	103,280,346	109,726,087	107,269,509	103,419,428	96,077,714
3. *Total Occupied*	113,127,566	103,753,625	110,199,367	107,742,789	103,893,237	96,551,523
4. *Remainder Unoccupied* ...	221,989,234	231,363,175	224,917,433	227,374,011	231,223,563	238,565,277

Total area of Northern Territory—335,116,800 acres.

6. **Western Australia.**—The total area of Western Australia is 624,588,800 acres, of which on the 30th June, 1910, 4,449,329 acres, or about a one-hundred-and-forty-fifth part, were alienated absolutely; 12,880,195 acres, or about one-fifty-fifth part, were in process of alienation; while 167,236,201 acres, or about one-quarter, were occupied under leases and licenses issued either by the Lands or the Mines Departments. The remaining 440,023,075 acres, or about two-thirds, were unoccupied.

The following table shews the area alienated absolutely and conditionally, and the areas held under leases and licenses at the end of the years 1901 and 1904 and on 30th June, 1907 to 1910:—

WESTERN AUSTRALIA.—ALIENATION AND OCCUPATION OF CROWN LANDS, 1901 TO 1910.

Particulars.	Area in Acres.					
	1901.	1904.	1906-7.*	1907-8.*	1908-9.*	1909-10.*
1. *Absolutely Alienated*	3,468,878	3,724,789	3,969,965	4,258,190	4,343,808	4,449,329
2. *In Process of Alienation*—						
Midland Railway Concessions ..	2,768,810	2,768,810	2,768,810	2,686,521	2,686,521	2,686,521
Free Homestead Farms ...	283,455	785,585	969,939	1,060,153	1,208,023	1,366,066
Conditional Purchases... ...	1,349,554	2,504,094	3,715,035	4,195,287	4,855,747	6,067,901
Selections from the late W.A. Company	75,213	60,478	53,094	48,966	43,247	38,628
Selections under the Agricultural Lands Purchase Act ...	37,235	102,696	142,647	146,770	180,313	202,059
Special Occupation Leases and Licenses	8,867	4,284	5,090	4,320	3,353	2,805
Homestead or Grazing Leases ...	286,425	1,114,373	1,242,839	1,516,755	2,278,714	2,433,341
Poison Land Leases or Licenses	1,306,270	492,719	201,965	85,303	85,303	82,019
Immigrants' Grants	400	200	100	100	100	100
Village Allotments	6	7	33	36	36	36
Working-men's Blocks... ...	31	273	489	537	667	719
Total in Process of Alienation	6,116,266	7,833,519	9,100,041	9,744,748	11,342,024	12,880,195
3. *Leases and Licenses in Force*—						
(i.) *Issued by Lands Department*						
Pastoral Leases	96,508,549	138,876,509	159,130,182	159,929,858	162,277,805	165,463,185
Special Leases	448	848	15,431	83,568	31,300	24,780
Leases of Reserves	5,296	981	77,518	207,571	219,582	475,901
Selections in Goldfields ...	3,955	2,653	100	100	100	100
Timber Leases and Licenses	865,180	885,140	864,521	903,154	916,386	1,143,572
Residential Lots	550	781	831	676	599	534
(ii.) *Issued by Mines Department*						
Gold Mining Leases... ...	34,056	32,530	27,587			
Mineral Leases	6,576	33,083	34,101	†130,970	†130,970	‡128,129
Other Leases	8,623	21,959	28,020			
Licenses	17,397	33,867	27,653			
Total under Leases and Licenses	97,450,660	139,888,351	160,205,944	161,255,897	163,576,742	167,236,201
4. *Area Unoccupied*	517,552,996	473,142,141	451,312,850	449,329,965	445,326,226	440,023,075

Total area of State—624,588,800 acres.

* Figures are now given as up to the 30th June, instead of as up to 31st December. Figures previous years may be obtained from the Statistical Registers of Western Australia. † On the December, 1908. ‡ On the 31st December, 1909.

During the year 1909-10 large areas of land were surveyed by the Lands Department prior to selection, and a large area of land lying north and south of the main Eastern railway was classified, and portions of it are being surveyed. The classification has proved the existence of an immense extent of good country, having a sufficient rainfall to make it suitable for mixed farming, and intending settlers are now turning their attention to this locality.

7. **Tasmania.**—Of the total area of Tasmania, namely, 16,777,600 acres, there were at the end of the year 1909, 4,890,000 acres, or about one-quarter, alienated absolutely; 1,006,642 acres, or about one-twentieth, were in process of alienation; 1,447,497 acres, or about one-eleventh, were occupied under leases and licenses for either pastoral, agricultural, timber, or mining purposes; the remaining 9,433,461 acres, or about five-eighths, being unoccupied. The following table shews the areas alienated, in process of alienation, and held under lease or license, and the area unoccupied at the end of the year 1901 and from 1905 to 1909:—

TASMANIA.—ALIENATION AND OCCUPATION OF CROWN LANDS. 1901 to 1909.

Particulars.	Area in Acres.					
	1901.	1905.	1906.	1907.	1908.	1909.
1. *Alienated Absolutely*	4,621,585	4,740,710	4,768,701	4,805,697	4,848,058	4,890,000
2. *In Process of Alienation*	272,376	598,243	710,837	796,725	870,088	1,006,642
3. *Leases or Licenses*						
(i.) *Issued by Lands Department*—						
Islands	149,165	89,003	91,131	109,531	103,130	90,100
Ordinary Leased Land	1,280,688	1,082,851	1,112,311	1,145,823	1,235,823	1,173,823
Land Leased for Timber ...	40,768	87,932	86,817	88,035	91,972	100,098
Closer Settlement	—	—	—	10,365	18,156	27,657
(ii.) *Issued by Mines Department* ...	50,362	45,075	53,122	79,163	56,693	55,819
Total	1,520,983	1,304,861	1,343,381	1,432,917	1,505,774	1,447,497
4. *Total Area Occupied*	6,414,944	6,643,814	6,822,919	7,035,339	7,223,920	7,344,139
5. *Area Unoccupied*	10,362,656	10,133,786	9,954,681	9,742,261	9,553,680	9,433,461

Total area of State—16,777,600 acres.

§ 12. Classification of Holdings according to Size.

1. **General.**—The classification of holdings according to their area is of interest chiefly in relation to the efforts made by the several States in recent years to promote settlement on the land on blocks of suitable size, especially by means of the Closer Settlement Acts. Returns shewing such a classification are not available for two of the States, viz., Queensland and South Australia.

The following table gives particulars of the number and aggregate area of holdings of lands alienated and in process of alienation in area series, as returned to the collectors of agricultural statistics, in New South Wales, Victoria, Western Australia, and Tasmania, for the season 1909-10:—

CLASSIFICATION OF HOLDINGS (ONE ACRE AND OVER) IN AREA SERIES, 1909 to 1910.

Size of Holdings.	N.S.W.	Victoria.	W. Australia.	Tasmania.	Total.
		NUMBER.			
Acres.					
1 to 50 ...	36,288	16,609	3,078	4,526	60,501
51 „ 100 ...	9,173	6,696	517	2,341	18,727
101 „ 500 ...	24,672	23,397	3,318	4,784	56,171
501 „ 1,000 ...	7,632	8,216	2,320	624	18,792
1,001 „ 5,000 ...	5,991	4,908	2,200	588	13,687
5,001 „ 10,000 ...	711	239	170	116	1,236
10,001 „ 20,000 ...	348	131	88	61	628
20,001 „ 50,000 ...	264	42	29	26	361
50,001 and over ...	99	2	6	2	109
Total ...	85,178	60,240	11,726	13,068	170,212
		AREA.			
Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1 to 50 ...	501,589	322,297	34,895	69,762	928,543
51 „ 100 ...	724,909	514,529	44,665	158,523	1,442,626
101 „ 500 ...	6,175,692	6,049,267	929,425	952,330	14,106,714
501 „ 1,000 ...	5,331,666	5,814,331	1,729,662	414,773	13,290,432
1,001 „ 5,000 ...	11,801,841	8,750,188	4,331,916	1,189,692	26,073,637
5,001 „ 10,000 ...	4,928,884	1,651,979	1,178,619	803,711	8,563,193
10,001 „ 20,000 ...	4,856,730	1,881,282	1,232,367	804,773	8,775,152
20,001 „ 50,000 ...	7,759,133	1,300,459	852,055	721,801	10,633,448
50,001 and over ...	9,176,119	116,486	553,995	287,053	10,133,653
Total ...	51,256,563	26,400,818	10,887,599	5,402,418	93,947,398

2. **New South Wales.**—The total number of holdings of one acre and over in area in this State on the 31st March, 1901, was 69,439. On the 31st March, 1910, the corresponding number was 85,178, shewing an increase of 15,739, or about 22.7 per cent. The following table shews the number of holdings of various sizes alienated absolutely, and in process of alienation, on the 31st March, 1901, and from 1905 to 1910:—

NEW SOUTH WALES.—CLASSIFICATION OF HOLDINGS ALIENATED AND IN PROCESS OF ALIENATION, 1901 to 1910.

Size of Holdings.	1901.	1905.	1906.	1907.	1908.	1909.	1910.
Acres.	Number.	Number.	Number.	Number.	Number.	Number.	Number.
1 to 50	28,155	31,734	32,413	33,184	34,833	35,345	36,288
51 „ 100	8,929	9,108	9,217	9,185	9,136	9,105	9,178
101 „ 500	20,504	21,989	22,268	22,986	23,652	24,069	24,672
501 „ 1,000	6,105	6,607	6,735	6,944	7,203	7,321	7,632
1,001 „ 5,000	4,464	4,928	5,185	5,376	5,542	5,796	5,991
5,001 „ 10,000	579	584	598	625	638	691	711
10,001 „ 20,000	352	357	356	364	368	358	348
20,001 „ 50,000	202	256	254	259	256	257	264
50,001 and over	149	109	110	106	104	103	99
Total ...	69,439	75,672	77,136	79,026	81,732	83,045	85,178

3. **Victoria.**—Lands alienated absolutely and in process of alienation in this State were classified according to size in March, 1906, 1908, and 1910. The following table shews the number and area of holdings of lands alienated absolutely and in process of alienation, on the 1st March, 1906, 1908 and 1910:—

VICTORIA.—CLASSIFICATION OF PRIVATE HOLDINGS, 1906 to 1910.

Size of Holdings.	1906.	1908.	1910.
Acres.	Number.	Number.	Number.
1 to 50	13,309	14,692	16,609
51 ,, 100	5,864	6,223	6,696
101 ,, 500	21,628	22,510	23,397
501 ,, 1,000	7,688	7,817	8,216
1,001 ,, 5,000	4,083	4,409	4,908
5,001 ,, 10,000	220	231	239
10,001 ,, 20,000	116	118	131
20,001 ,, 50,000	73	61	42
50,001 and over	6	4	2
Total ...	52,987	56,065	60,240

4. **Western Australia.**—In this State the number of holdings of one acre and over in area was 5699 for the season 1900-1 (see Year Book No. 1), and was 11,726 for the season 1909-10, shewing an increase of 6027, or about 105.8 per cent. The subjoined table shews the number of holdings of lands alienated absolutely, and in process of alienation, for which returns were received for different seasons since the season 1900-1901, classified according to size:—

WESTERN AUSTRALIA.—NUMBER OF HOLDINGS OF ALIENATED LANDS AND LANDS IN PROCESS OF ALIENATION, 1901 to 1910.

Size of Holdings.	1900-1.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.
Acres.	Number.	Number.	Number.	Number.	Number.	Number.
1 to 50	1,728	2,593	2,714	2,933	3,061	3,078
51 ,, 100	198	518	518	509	510	517
101 ,, 200	2,302	2,579	2,798	3,067	3,314	3,318
501 ,, 1,000	717	1,311	1,497	1,731	2,038	2,320
1,001 ,, 5,000	607	1,263	1,399	1,685	1,848	2,200
5,001 ,, 10,000	73	134	137	145	158	170
10,001 ,, 20,000	38	49	65	66	71	88
20,001 ,, 50,000	36*	23	22	24	25	29
50,001 and over	...	5	7	7	6	6
Total ...	5,699	8,475	9,157	10,167	11,031	11,726

* Including number of holdings of 30,001 acres and upwards.

5. **Tasmania.**—In Tasmania the total number of holdings of lands alienated absolutely and in process of alienation on the 1st March, 1909, was 12,413. Particulars for previous years are not available. The following table shews the classification of holdings in area series in 1908-9 and 1909-10 :—

TASMANIA.—NUMBER OF HOLDINGS OF ALIENATED LANDS AND LANDS IN PROCESS OF ALIENATION, 1908-9 and 1909-10.

Size of Holdings.	1908-9.		1909-10.	
	Number.	Area.	Number.	Area.
Acres.		Acres.		Acres.
1 to 50	4,301	68,826	4,526	69,762
51 „ 100	2,277	153,743	2,341	158,523
101 „ 500	4,486	891,603	4,784	952,330
501 „ 1,000	585	391,521	624	414,773
1,001 „ 5,000	572	1,197,568	588	1,189,692
5,001 „ 10,000	108	726,851	116	803,711
10,001 „ 20,000	57	788,995	61	804,773
20,001 „ 50,000	24	651,762	26	721,801
50,001 and over	3	274,031	2	287,053
Total	12,413	5,144,900	13,068	5,402,418

§ 13. The Progress of Land Settlement, 1900 to 1909.

1. **Recent Progress.**—The progress of settlement and the growth of land alienation in the States of the Commonwealth under recent legislation is seen in the subjoined statement which shews concisely the condition of the public estate in each State and in the Commonwealth at the end of each year from 1900 to 1909, inclusive. The effect of the land laws during that period has been generally to diminish the number of large holdings, at the same time decreasing the area held under lease, while both the area alienated and the area in process of alienation have increased. As leases of large areas fall in or are otherwise terminated they are in many cases not renewed, but the land leased is cut up for the purpose of settlement under systems of deferred payment; the State Governments, also, have in many cases acquired by repurchase considerable areas under the provisions of the various Closer Settlement Acts. Further; greater facilities have been granted to the working classes to acquire possession of the soil, and special inducements have been offered to *bonâ fide* settlers by the introduction of new forms of tenure on easy terms and conditions.

From 1900 to 1909 the area alienated absolutely in the whole Commonwealth increased by 18,459,970 acres, or 25 per cent.; the area in process of alienation increased by 9,452,822 acres, or 30 per cent.; the area leased by 11,559,331 acres, or 1 per cent.; while the area unoccupied decreased by 39,472,123 acres, or 4 per cent.

TOTAL AREAS ALIENATED, IN PROCESS OF ALIENATION,

HELD UNDER LEASE OR LICENSE, AND UNOCCUPIED, IN EACH STATE AND IN THE COMMONWEALTH AT THE END OF EACH YEAR FROM 1900 TO 1909 INCLUSIVE, EXPRESSED ABSOLUTELY AND AS PERCENTAGES OF AREA OF ENTIRE STATE.

NEW SOUTH WALES.—AREA, 198,638,080 ACRES.

Year.	Alienated.		In Process of Alienation.		Held under Lease or License.		Unoccupied.	
	Area in Acres.	Per Cent.	Area in Acres.	Per Cent.	Area in Acres.	Per Cent.	Area in Acres.	Per Cent.
1900	25,856,698	13.02	21,546,284	10.85	126,085,148	63.47	25,149,950	12.66
1901	26,443,554	13.32	21,595,688	10.87	127,055,370	63.96	23,543,468	11.85
1902	27,658,901	13.93	21,042,993	10.59	131,781,329	66.34	18,154,857	9.14
1903	28,765,090	14.48	20,558,609	10.35	128,461,932	64.67	20,852,449	10.50
1904	29,968,317	15.09	19,296,487	9.71	124,027,706	62.44	25,345,570	12.76
1905	30,721,430[1]	15.47	18,797,421[1]	9.46	124,027,706	62.44	25,091,523	12.63
1906[1]	32,486,086	16.36	17,532,816	8.83	124,237,031	62.54	24,382,147	12.27
1907[1]	33,921,508	17.08	16,720,147	8.42	126,081,293	63.47	21,915,132	11.03
1908[1]	35,467,021	17.85	15,798,047	7.95	129,150,578	65.02	18,222,434	9.18
1909[1]	36,783,741	18.52	15,217,891	7.66	128,390,868	64.63	18,245,580	9.19
1910[1]	37,999,049	19.13	15,460,919	7.78	125,733,630	63.30	19,444,482	9.79

1. To 30th June.

VICTORIA.—AREA, 56,245,760 ACRES.

1900	19,689,359	35.01	3,679,436	6.54	17,324,015	30.80	15,552,950	27.65
1901	20,066,875	35.67	3,730,351	6.63	17,110,709	30.42	15,337,825	27.28
1902	20,585,413	36.60	3,491,813	6.21	17,254,468	30.67	14,914,066	26.52
1903	21,095,586	37.51	3,448,726	6.13	9,516,186	16.92	22,185,262	39.44
1904	21,679,596	38.54	4,140,867	7.37	13,693,116	24.34	16,732,181	29.75
1905	22,584,092	40.15	3,819,783	6.79	17,938,838	31.90	11,903,047	21.16
1906	22,816,538	40.57	4,040,209	7.18	16,683,992	29.66	12,705,021	22.59
1907	22,940,143	40.79	4,488,346	7.98	16,565,917	29.45	12,251,354	21.78
1908	23,074,634	41.03	4,890,021	8.69	15,955,346	28.36	12,325,759	21.92
1909	23,107,613	41.08	5,358,496	9.53	16,384,395	29.13	11,395,256	20.26

QUEENSLAND.—AREA, 429,120,000 ACRES.

1900	13,323,524	3.10	2,585,996	0.60	281,231,821	65.54	131,978,659	30.76
1901	13,533,468	3.15	2,791,664	0.65	280,023,979	65.26	132,770,889	30.94
1902	13,663,446	3.18	3,160,909	0.74	289,552,857	67.48	122,742,788	28.60
1903	13,770,725	3.21	3,220,402	0.75	277,639,715	64.70	134,489,158	31.34
1904	14,031,886	3.27	3,165,737	0.74	236,249,168	55.05	175,673,209	40.94
1905	14,252,664	3.32	3,407,210	0.79	240,162,954	55.97	171,297,172	39.92
1906	14,585,560	3.40	3,737,083	0.87	247,068,540	57.58	163,728,817	38.15
1907	14,924,417	3.48	4,778,908	1.11	264,219,200	61.57	145,197,475	33.84
1908	15,108,439	3.52	6,200,930	1.45	273,307,365	63.69	134,503,266	31.34
1909	15,296,688	3.56	6,806,467	1.59	283,023,871	65.95	123,992,974	28.90

Year.	Alienated.		In Process of Alienation.		Held under Lease or License.		Unoccupied.	
	Area in Acres.	Per Cent.	Area in Acres.	Per Cent.	Area in Acres.	Per Cent.	Area in Acres.	Per Cent.
SOUTH AUSTRALIA.—AREA, 243,244,800 ACRES.								
1900	7,466,353	3.07	607,461	0.25	84,274,133	34.65	150,896,853	62.03
1901	7,535,123	3.10	553,774	0.23	85,591,295	35.18	149,564,608	61.49
1902	7,655,204	3.15	451,232	0.19	89,355,938	36.74	145,782,426	59.92
1903	7,799,729	3.21	344,258	0.14	91,123,625	37.46	143,977,188	59.19
1904	8,020,908	3.30	810,589	0.13	92,552,386	38.04	142,360,917	58.53
1905	8,114,124	3.34	455,381	0.19	94,275,954	38.76	140,399,341	57.71
1906	8,187,621	3.37	759,337	0.31	95,183,046	39.13	139,114,796	57.19
1907	8,316,059	3.42	1,134,424	0.47	98,692,304	40.57	135,102,013	55.54
1908	8,463,631	3.48	1,195,550	0.49	102,617,100	42.20	130,968,519	53.83
1909	8,670,874	3.56	1,297,277	0.53	106,956,007	43.97	126,320,642	51.94
NORTHERN TERRITORY.—AREA, 335,116,800 ACRES.								
1900	473,195	0.14	...	...	186,749,480	55.73	147,894,125	44.13
1901	473,278	0.14	...	...	112,654,288	33.62	221,989,234	66.24
1902	473,278	0.14	...	...	113,865,968	33.98	220,777,554	65.88
1903	473,278	0.14	...	...	104,638,788	31.23	230,004,734	68 63
1904	473,278	0.14	...	...	104,670,948	31.23	229,972,574	68.63
1905	473,279	0.14	...	...	103,280,346	30.82	231,363,175	69.04
1906	473,280	0.14	...	...	109,726,087	32.74	224,917,433	67.12
1907	473,280	0.14	...	...	107,269,509	32.01	227,374,011	67.85
1908	473,809	0.14	...	...	103,419,428	30.86	231,223,563	69.00
1909	473,809	0.14	...	...	96,077,714	28.67	238,565,277	71.19
WESTERN AUSTRALIA.—AREA, 624,588,800 ACRES.								
1900	3,462,490	0.55	3,156,798	0.51	87,375,981	13.99	530,593,531	84.95
1901	3,468,878	0.56	6,116,266	0.98	97,450,660	15.60	517,552,996	82.86
1902	3,517,724	0.56	6,338,868	1.02	112,177,993	17.95	502,554,215	80.47
1903	3,646,139	0.58	6,901,918	1.11	135,700,188	21.72	478,340,555	76.59
1904	3,724,789	0.60	7,833,519	1.25	139,888,351	22.39	473,142,141	75.76
1905	3,765,975	0.60	8,614,060	1.38	145,802,790	23.34	466,405,975	74.68
1906[1]	3,781,613	0.60	8,794,289	1.41	152,551,086	24.42	459,461,812	73.57
1907[1]	3,969,965	0.63	9,100,041	1.46	160,205,944	25.65	451,312,850	72.26
1908[1]	4,258,190	0.68	9,744,748	1.56	161,255,897	25.82	449,329,965	71.94
1909[1]	4,343,808	0.70	11,342,024	1.81	163,576,742	26.19	445,326,226	71.30
1910[1]	4,449,329	0.71	12,880,195	2.06	167,236,201	26.78	440,023,075	70.45

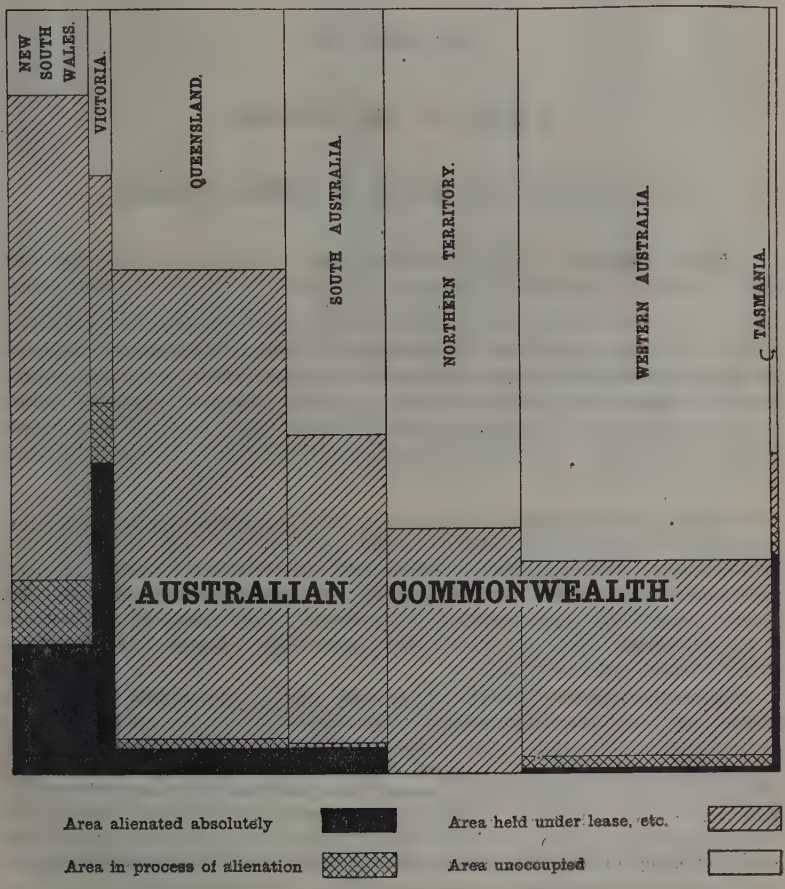
1. To 30th June.

TASMANIA.—AREA, 16,777,600 ACRES.								
1900	4,834,944	28.82	[1]	[1]	1,267,185	7.55	10,675,471	63.63
1901	4,621,585	27.54	272,376	1.62	1,520,983	9.06	10,362,656	61.78
1902	4,658,878	27.76	296,672	1.77	1,518,895	9.05	10,303,155	61.42
1903	4,685,521	27.93	354,892	2.11	1,582,286	9.43	10,154,901	60.53
1904	4,724,380	28.16	444,441	2.65	1,389,643	8.28	10,219,136	60.91
1905	4,740,710	28.26	598,243	3.56	1,304,861	7.77	10,133,786	60.41
1906	4,768,701	28.42	710,837	4.24	1,343,381	8.01	9,954,681	59.33
1907	4,805,697	28.64	796,725	4.75	1,432,917	8.54	9,742,261	58.07
1908	4,848,058	28.90	870,088	5.19	1,505,774	8.97	9,553,680	56.94
1909	4,890,000	29.15	1,006,642	6.00	1,447,497	8.68	9,433,461	56.17

1. Included in area alienated.

THE COMMONWEALTH.—AREA, 1,903,731,840 ACRES.								
1900	75,106,563	3.94	31,575,975	1.66	784,307,763	41.20	1,012,741,539	53.20
1901	76,142,761	4.00	35,060,119	1.84	721,407,284	37.89	1,071,121,676	56.27
1902	78,212,844	4.11	34,782,487	1.82	755,507,448	39.66	1,035,229,061	54.41
1903	80,236,068	4.21	34,828,805	1.82	748,662,720	39.32	1,040,004,247	54.65
1904	82,623,154	4.34	35,191,640	1.85	712,471,318	37.42	1,073,445,728	56.39
1905	84,652,274	4.45	35,692,098	1.87	726,793,449	38.18	1,056,594,019	55.50
1906	87,099,399	4.57	35,574,571	1.87	746,793,163	39.23	1,034,264,707	54.33
1907	89,351,069	4.69	37,018,591	1.95	774,467,084	40.68	1,002,895,096	52.68
1908	91,693,782	4.82	38,699,384	2.02	787,211,488	41.36	986,127,186	51.80
1909	93,566,533	4.91	41,028,797	2.15	795,867,094	41.81	973,269,416	51.13

2. **Diagram shewing Condition of Public Estate.**—The following diagram shews the condition of the public estate in the Commonwealth at the end of the year 1909. The square itself represents the total area of the Commonwealth, while the relative areas of individual States are shewn by the vertical rectangles. The areas alienated absolutely, in process of alienation under systems of deferred payments, and the areas held under leases or licenses, are designated by the differently-shaded areas as described in the reference given below the diagram, while the areas unoccupied are left unshaded:—



SECTION VII.

PASTORAL PRODUCTION.

§ 1. Initiation and Growth of Pastoral Industry.

1. **Early Statistics.**—The live stock which Captain Phillip brought with him when establishing the first settlement in Australia, in January, 1788, is stated to have comprised seven horses, six cattle, twenty-nine sheep, twelve pigs, and a few goats. Later in the same year, in a letter from Captain Phillip to Lord Sydney, then Secretary of State for the Colonies, an enclosure signed by "Andrew Miller, Commissary," sets forth in detail the numbers of each kind of live stock in the colony on 1st May, 1788. A summary of the particulars supplied is as follows:—Horses, 7; cattle, 7; sheep, 29; pigs, 74; rabbits, 5; turkeys, 18; geese, 29; ducks, 35; fowls, 209. In view of the depredation since caused by rabbits their inclusion in this return as part of the live stock of the Commonwealth is of interest.

2. **Subsequent Development.**—During the years immediately succeeding the first settlement the growth of the number of live stock was slow, and notwithstanding importations from India and the Cape of Good Hope the total of the flocks and herds of Australia amounted in 1800 to only 203 horses, 1044 cattle, 6124 sheep, and 4017 pigs. During the next fifty years, however, the pastoral industry made rapid strides, and at the end thereof (1850) the totals reached were 159,951 horses, 1,894,834 cattle, 15,993,954 sheep, and 114,000 pigs.

The statistical records of live stock in Australia prior to the year 1860 are somewhat defective, but from that year onwards fairly complete particulars are available in most of the States. At the present time statistics of live stock are collected annually in all the States, principally through the agency of the police, but in the years 1885 to 1888 inclusive, and 1893 to 1895 inclusive, no such particulars were collected in South Australia, and similar gaps occur in the Victorian records for the periods 1895 to 1899 inclusive, and 1901 to 1903. In order to obtain totals for the Commonwealth for these years the missing numbers have been supplied by interpolation. The results so obtained probably differ but slightly from the actual numbers for the respective years.

3. **Increase in Numbers.**—Particulars concerning the numbers of each kind of live stock in the Commonwealth at quinquennial intervals from 1860 to 1900, and thence onwards in single years, are given in the following table, and are shewn continuously in the graphs as given hereinafter.

During the forty-nine years covered by the table the live stock of the Commonwealth increased considerably, horses by 369 per cent., cattle 179 per cent., sheep 355 per cent., and pigs 118 per cent. The average annual increases which these aggregates represent are as follows:—Horses, 3.20 per cent. per annum; cattle, 2.12 per cent.; sheep, 3.14 per cent.; and pigs, 1.60 per cent.

COMMONWEALTH LIVE STOCK, 1860 to 1909.

Year.	Horses.	Cattle.	Sheep.	Pigs.
1860	431,525	3,957,915	20,135,286	351,096
1865	566,574	3,724,813	29,539,928	345,704
1870	716,772	4,276,326	41,593,612	543,388
1875	835,393	6,389,610	53,124,209	549,808
1880	1,068,402	7,527,142	62,186,702	815,776
1885	1,143,064	7,397,947	67,491,976	748,908
1890	1,521,588	10,299,913	97,881,221	891,138
1895	1,680,419	11,767,488	90,689,727	822,750
1900	1,609,654	8,640,225	70,602,995	950,349
1901	1,620,420	8,491,428	72,040,211	931,309
1902	1,524,601	7,062,742	53,668,347	777,289
1903	1,546,054	7,247,508	56,932,705	837,368
1904	1,595,256	7,840,520	65,823,918	1,062,703
1905	1,673,805	8,525,025	74,403,704	1,014,853
1906	1,765,186	9,349,409	83,687,655	813,569
1907	1,871,714	10,128,486	87,650,263	754,101
1908	1,927,731	10,547,679	87,043,266	695,689
1909	2,022,917	11,040,391	91,676,281	765,137

4. **Fluctuations.**—The increases referred to, however, have not been continuous, marked fluctuations having taken place during the period, mainly on account of the droughts which have from time to time left their impress on the pastoral history of Australia. These were in evidence in 1869, 1877, 1884, 1895 and subsequent years, 1902, and to some extent in 1908. The drought of 1902 was one of the most severe experienced in Australia, the number of sheep in the Commonwealth diminishing under its influence from 72,040,211 on 31st December, 1901, to 53,668,347 at the same date in 1902—a decrease of more than 25 per cent.

The extraordinary recuperative power of Australia is evidenced by the large increases in the numbers of stock which the good seasons, supervening on the various droughts, have witnessed. Thus, in the seven years from 1902 to 1909, horses increased by 498,308, cattle by 3,977,626, and sheep by 37,993,034, the corresponding increases per cent. per annum being horses 4.12 per cent., cattle 6.59 per cent., and sheep 7.95 per cent.

The number of horses in the Commonwealth at the end of 1909 was higher than for any previous year. The number of cattle was higher than for any year since 1896, and the number of sheep higher than for any year since 1894. The years in which the numbers of live stock attained their maxima are as follows:—Horses, 1909, 2,022,909; cattle, 1894, 12,311,617; sheep, 1891, 106,421,068; and pigs, 1904, 1,062,703.

5. **Live Stock in Relation to Population.**—The number of each kind of live stock per head of the population of the Commonwealth has varied during the past forty-nine years in the manner shewn in the succeeding table:—

NUMBER OF LIVE STOCK PER HEAD OF POPULATION, 1860 to 1909.

Year.	Horses.	Cattle.	Sheep.	Pigs.	Year.	Horses.	Cattle.	Sheep.	Pigs.
1860 ...	0.38	3.45	17.58	0.31	1901 ...	0.42	2.22	18.83	0.24
1865 ...	0.41	2.68	21.25	0.25	1902 ...	0.39	1.82	13.82	0.20
1870 ...	0.43	2.60	25.24	0.33	1903 ...	0.39	1.85	14.50	0.21
1875 ...	0.44	3.37	27.99	0.29	1904 ...	0.40	1.97	16.52	0.27
1880 ...	0.48	3.37	27.87	0.37	1905 ...	0.41	2.10	18.36	0.25
1885 ...	0.42	2.75	25.05	0.28	1906 ...	0.43	2.27	20.31	0.20
1890 ...	0.48	3.27	31.06	0.28	1907 ...	0.45	2.41	20.88	0.18
1895 ...	0.48	3.36	25.93	0.24	1908 ...	0.45	2.47	20.36	0.16
1900 ...	0.43	2.29	18.75	0.25	1909 ...	0.46	2.52	20.94	0.17

Considered in relation to population, the live stock attained its maximum in the period 1890-5, and its minimum in the year 1902. During the period of forty-nine years under review, the number of horses varied but slightly in proportion to population, the range being from 0.38 to 0.48 per head. In the case of cattle, the limits of variation were 1.82 and 3.45; sheep, 13.82 and 31.06; and pigs, 0.16 and 0.37.

6. **Live Stock in Relation to Area.**—The numbers of live stock per square mile in the several States of the Commonwealth on 31st December, 1909, were as follows:—

NUMBER OF LIVE STOCK PER SQUARE MILE, 31st DECEMBER, 1909.

State.	Horses.	Cattle.	Sheep.	Pigs.
New South Wales	1.95	9.76	148.86	0.77
Victoria	5.04	17.63	147.22	2.48
Queensland	0.83	7.03	29.22	0.19
South Australia...	0.28	0.84	7.17	0.09
Western Australia	0.13	0.81	4.85	0.05
Tasmania	1.54	7.63	66.17	2.12
Commonwealth	0.68	3.71	30.81	0.26

7. **Net Exports of Principal Pastoral Products.**—The quantities by which the exports of the principal pastoral products of the Commonwealth exceeded the imports for the years 1905 to 1909 are as follows:—

QUANTITIES OF NET EXPORTS OF PRINCIPAL PASTORAL PRODUCTS OF THE COMMONWEALTH, 1905 to 1909.

Products.	Unit of Quantity.	1905.	1906.	1907.	1908.	1909.
Animals (living)—						
Cattle	No.	258	391	504	841	894
Horses	,,	20,487	10,346	12,116	9,164	6,335
Sheep	,,	6,569	6,477	—398	9,001	2,540
Bones	cwt.	8,745	1,570	4,459	11,008	13,070
Glue Pieces and Sinews	,,	21,912	19,355	21,941	23,417	20,199
Glycerine	lb.	1,217,175	921,828	592,435	*	*
Hair	,,	282,825	328,555	285,478	191,475	190,052
Hoofs	cwt.	19,396	4,897	6,784	5,972	4,666
Horns	,,		15,973	15,944	*	*
Meats—						
Frozen Beef	lb.	43,460,360	41,561,252	52,050,592	40,707,121	71,130,972
,, Mutton †	,,	86,764,222	90,684,899	109,227,757	91,607,614	116,914,965
,, Rabbits and Hares	pair	8,786,111	11,048,201	10,648,534	7,604,053	9,181,312
,, Other...	lb.	1,351,791	1,056,902	815,559	659,719	1,114,536
Potted and Extract of	,,	*	*	*	*	*
Preserved in Tins, etc.	,,	12,986,183	8,581,548	7,820,511	11,979,606	22,877,569
Other...	,,	1,068,627	141,758	64,370	—120,055	235,479
Sausage Casings	,,	*	*	*	*	*
Skins—						
Hides	No.	67,123	1,556	33,623	219,796	286,973
Sheep	,,	7,237,303	7,696,930	9,691,688	8,683,034	10,658,776
Rabbit and Hare	cwt.	73,417	105,569	100,802	65,391	62,180
Other, including Undressed Furs ...	No.	*	*	*	*	*
Tallow	cwt.	693,117	683,178	674,723	586,220	929,157
Wool—Greasy	lb.	380,257,165	415,141,982	512,036,100	471,540,092	528,388,349
Scoured	,,	56,758,160	64,882,802	72,295,353	70,883,847	73,569,380
Tops	,,					496,492

* Quantity not available. † Including lamb. Note. — signifies net imports.

The values of the net exports for the same five years are furnished in the next table and amount to no less a total than £149,782,780 for the period, or an average of £29,956,556 per annum, of which wool represents about 80 per cent. Skins, meats, and tallow rank next in order of importance.

VALUES OF NET EXPORTS OF PRINCIPAL PASTORAL PRODUCTS OF THE COMMONWEALTH, 1905 to 1909.

Products.	1905.	1906.	1907.	1908.	1909.
	£	£	£	£	£
Animals (living)—					
Cattle	4,860	—1,389	—1,445	704	3,876
Horses	327,447	206,006	266,325	152,672	84,695
Sheep	—6,834	—2,704	—2,127	5,735	6,030
Bones	3,585	3,503	5,628	5,189	6,041
Glue Pieces and Sinews	11,253	13,948	17,458	12,679	11,800
Glycerine	15,513	9,186	6,983	3,179	2,316
Hair	20,240	28,812	21,086	16,739	22,584
Hoofs	24,262	2,355	2,064	2,024	1,622
Horns		22,870	18,969	18,270	18,729
Meats—					
Frozen Beef	441,210	434,455	575,732	451,503	733,028
,, Mutton and Lamb	1,111,421	1,094,984	1,377,502	1,219,107	1,231,027
,, Rabbits and Hares	389,738	491,434	472,816	336,093	423,679
,, Other	14,733	13,290	12,814	8,507	18,027
Potted and Extract of	—10,161	—11,477	19,891	22,108	57,061
Preserved in Tins, etc.	232,484	157,432	133,165	213,476	401,606
Other	14,461	1,770	673	—2,890	1,663
Sausage Casings	2,552	1,478	41,122	26,600	52,182
Skins—					
Hides	71,209	—9,764	—10,079	86,310	239,539
Sheep	1,321,021	1,587,579	1,822,604	1,230,878	1,736,464
Rabbit and Hare	297,222	476,972	374,882	304,990	347,244
Other, including Undressed Furs	308,408	445,201	304,130	276,703	607,158
Tallow	783,396	876,748	1,014,870	785,910	1,229,541
Wool—Greasy	15,568,290	17,539,836	22,898,318	18,017,420	20,580,783
Scoured	4,246,634	5,098,195	5,962,599	4,883,805	4,820,092
Tops	...	...	...	...	58,638
Total Values	25,192,944	28,480,720	35,335,980	28,077,711	32,695,425

Note. — signifies net imports.

§ 2. Horses.

1. **Suitability of Australia for Horse-breeding.**—From the earliest times the suitability of the climate and pastures of Australia for the production of serviceable breeds of horses has been fully recognised. By the importation of high-class sires, and the careful selection of breeding mares, these natural advantages were utilised to the fullest extent, all classes of horses being bred. As a consequence of this combination of advantages the Australian horse, whether of the heavy draught, medium weight or light saddle and carriage variety, compares more than favourably with the product of other lands. The Australian horse has been found suitable for the army in India, and large numbers are obtained annually for remount purposes.

2. **Distribution throughout the Commonwealth.**—As regards numbers, the State of New South Wales, the earliest settled of the group, established a lead, which it has ever since retained. The figures for the several States for a series of years are as follows:—

NUMBER OF HORSES, STATES AND COMMONWEALTH, 1860 to 1909.

Year.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Commonwealth.
1860...	251,497	76,536	23,504	49,399	9,555	21,034	431,525
1865...	282,587	121,051	51,091	73,993	15,700	22,152	566,574
1870...	337,597	167,220	83,358	83,744	22,174	22,679	716,772
1875...	357,696	196,184	121,497	107,164	29,379	23,473	835,393
1880...	395,984	275,516	179,152	157,915	34,568	25,267	1,068,402
1885...	344,697	304,098	260,207	171,060	34,392	28,610	1,143,064
1890...	444,163	436,459	365,812	199,605	44,384	31,165	1,521,588
1895...	499,943	424,995	468,743	196,652	58,506	31,580	1,680,419
1900...	481,417	392,237	456,788	179,352	68,253	31,607	1,609,654
1901...	486,716	387,277	462,119	178,199	73,710	32,399	1,620,420
1902...	450,125	382,317	399,122	179,413	80,158	33,466	1,524,601
1903...	458,014	377,357	401,984	192,411	82,747	33,541	1,546,054
1904...	482,663	372,397	413,165	200,241	90,225	36,565	1,595,256
1905...	506,884	385,513	430,565	216,345	97,397	37,101	1,673,805
1906...	537,762	406,840	452,916	224,447	104,922	38,299	1,765,186
1907...	578,326	424,648	488,486	226,532	113,330	40,392	1,871,714
1908...	591,045	424,903	519,969	235,136	116,795	39,883	1,927,731
1909...	604,784	442,829	555,613	253,884	125.315	40,492	2,022,917

3. **Proportion in the Several States.** — The percentages of the numbers of horses in the several States on the totals for the Commonwealth for the past ten years are as follows:—

PERCENTAGE OF HORSES IN EACH STATE ON TOTAL FOR COMMONWEALTH,

1900 TO 1909.

Year.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Commonwealth.
	%	%	%	%	%	%	%
1900...	29.91	24.37	28.38	11.14	4.24	1.96	100.00
1901...	30.03	23.90	28.52	11.00	4.55	2.00	100.00
1902...	29.52	25.08	26.18	11.77	5.26	2.19	100.00
1903...	29.62	24.41	26.00	12.45	5.35	2.17	100.00
1904...	30.26	23.34	25.90	12.55	5.66	2.29	100.00
1905...	30.28	23.03	25.72	12.93	5.82	2.22	100.00
1906...	30.47	23.05	25.66	12.71	5.94	2.17	100.00
1907...	30.90	22.69	26.10	12.10	6.05	2.16	100.00
1908...	30.66	22.04	26.97	12.20	6.06	2.07	100.00
1909...	29.90	21.89	27.47	12.55	6.19	2.00	100.00

During the period under review, the proportions in South Australia and Western Australia have increased, those in Victoria and Queensland have diminished, while in the case of New South Wales and Tasmania the proportion in 1909 was practically identical with that in 1900.

4. **Oversea Export Trade in Horses.**—Australia's export trade in horses is a fairly considerable, though somewhat fluctuating, one. During the past five years it has varied in number between 20,808 for the year 1905 and 7807 in 1909, and in value between £366,730 and £173,012 respectively for the same two years. The total number of horses exported during the five years amounted to 61,687, an average of 12,337 per annum. The total value of the exports for the period was £1,341,686, or £268,337 per annum.

The average export value per head for the period was £21 15s. The numbers exported to the principal countries concerned in this trade are as follows:—

NUMBER AND DESTINATION OF HORSES EXPORTED FROM THE COMMONWEALTH, 1905 TO 1909.

Country to which Exported.	1905.	1906.	1907.	1908.	1909.	Total for 5 years.
	No.	No.	No.	No.	No.	No.
India	7,706	7,931	9,136	6,276	6,079	37,128
Hong Kong	8,248	6	5	15	29	8,303
Straits Settlements ...	702	903	991	651	353	3,600
Java	326	501	954	605	594	2,980
Japan	1,754	51	284	227	1	2,317
Philippine Islands	773	118	295	708	315	2,209
Natal	232	413	165	16	1	827
Fiji	446	103	57	88	114	808
China	112	298	178	38	19	645
German S.W. Africa ...	...	...	...	622	...	622
Ceylon	...	40	199	165	97	501
New Zealand	184	80	75	52	31	422
Mauritius	56	127	...	103	70	356
Burma	95	50	32	20	57	254
Cape of Good Hope	58	51	2	3	2	116
Other Countries	116	100	259	79	45	599
Total	20,808	10,772	12,632	9,668	7,807	61,687

The corresponding particulars relative to the value of the horses exported are given in the next table:—

VALUE OF HORSES EXPORTED FROM THE COMMONWEALTH, 1905 to 1909.

Country to which Exported.	1905.	1906.	1907.	1908.	1909.	Total for 5 years.
	£	£	£	£	£	£
India	144,802	185,254	224,341	137,708	125,631	817,736
Hong Kong	119,504	160	205	545	888	121,302
Straits Settlements	15,107	18,022	26,952	15,491	10,339	85,911
Java	4,440	12,296	25,502	16,457	19,598	78,293
Japan	30,215	1,990	11,715	12,234	60	56,214
Philippine Islands	10,151	2,603	4,949	12,134	5,303	35,140
Natal	6,550	8,193	4,026	856	100	19,725
Fiji	11,189	2,855	1,142	2,356	2,982	20,524
China	2,671	5,942	3,299	892	295	13,099
German S.W. Africa ...	...	...	...	13,255	...	13,255
Ceylon	...	4,335	4,886	3,418	2,201	14,840
New Zealand	13,206	8,261	4,020	3,436	2,847	31,770
Mauritius	1,140	1,791	...	2,385	480	5,796
Burma	2,625	1,500	960	360	1,055	6,500
Cape of Good Hope	1,190	1,030	70	75	80	2,445
Other Countries	3,940	4,024	7,403	2,616	1,153	19,136
Total	366,730	258,256	319,470	224,218	173,012	1,341,686

It will be seen from the foregoing tables that the export trade in horses with India, the Straits Settlements, and Java has been fairly uniform throughout the five years under review, but that the particulars for some of the other countries specified exhibit

marked fluctuations. Thus the exports to Hong Kong and Japan were exceptionally large in 1905.

The number of horses imported into the Commonwealth is comparatively small, consisting mainly of valuable animals introduced for breeding purposes, and imported principally from New Zealand and the United Kingdom. The average value per head of the horses imported during the five years was £94 0s. 6d., as compared with £21 15s. per head for the exports for the same period. The average number imported per annum was, however, only 648, and the average annual value £60,908. The following table furnishes a comparison of imports and exports of horses during the five years 1905 to 1909:—

COMMONWEALTH IMPORTS AND EXPORTS OF HORSES, 1905 to 1909.

Year.	Imports.		Exports.		Net Exports.	
	No.	Value.	No.	Value.	No.	Value.
		£		£		£
1905	321	39,283	20,808	366,730	20,487	327,447
1906	426	52,250	10,772	258,256	10,346	206,006
1907	516	53,145	12,632	319,470	12,116	266,325
1908	504	71,546	9,668	224,218	9,164	152,672
1909	1,472	88,317	7,807	173,012	6,335	84,695
Total for 5 years	3,239	304,541	61,687	1,341,686	58,448	1,037,145

5. **Interstate Trade in Horses.**—From the following table shewing the number of horses which each of the States imported from or exported to other States during the year 1909 it will be seen that the only States shewing an excess of exports over imports were Queensland and Tasmania:—

INTERSTATE TRADE IN HORSES, 1909.

State.	Imports from other States of the Commonwealth.		Exports to other States of the Commonwealth.		Net Interstate Exports.	
	Number.	Value.	Number.	Value.	Number.	Value.
		£		£		£
New South Wales	11,307	276,438	8,489	325,836	—2,818	49,398
Victoria	5,997	291,412	5,223	273,070	—774	—18,342
Queensland ...	2,456	59,668	9,118	118,956	6,662	54,288
South Australia ...	3,517	96,673	1,321	44,438	—2,196	—52,235
Western Australia	961	42,921	23	1,693	—938	—41,228
Tasmania... ...	405	13,369	469	21,488	64	8,119

Note. — signifies net imports.

6. **Comparison with other Countries.**—The numbers of horses in some of the leading horse-breeding countries of the world, according to the latest available returns, are as follows:—

NUMBER OF HORSES IN SOME OF THE LEADING HORSE-BREEDING COUNTRIES IN THE WORLD.

Country.	Date.	Number of Horses.	Country.	Date.	Number of Horses.
Russian Empire[1] ...	1908	29,048,888	Sweden	1907	566,227
Utd. States America	1908	20,640,000	Bulgaria ...	1905	538,273
Argentine Republic	1908	7,531,376	Denmark ...	1903	486,935
Germany... ...	1907	4,345,043	Uruguay ...	1905	450,151
Austria-Hungary[2] ...	1895 & 1902	3,849,388	Spain	1908	445,776
France[3]	1907	3,094,698	New Zealand ...	1907-8	352,832
Canada[4]	1908	2,118,165	Netherlands ...	1904	295,277
United Kingdom[5] ...	1908	2,088,713	Cape of Good Hope	1904	255,060
Australia... ...	**1909**	**2,022,917**	Belgium... ...	1907	249,831
Japan[6]	1907	1,495,252	Algeria	1907	221,453
British India[7] ...	1907	1,308,027	Norway	1900	172,999
Italy	1908	955,051	Servia	1905	172,281
Rumania... ...	1900	864,324	Switzerland ...	1906	135,372
Mexico	1902	859,217	Orange River Col'ny	1907	127,579

1. Preliminary figures. 2. Austria, 1902; Hungary, 1895. 3. Employed on farms. 4. Exclusive of British Columbia. 5. Agricultural horses, unbroken horses, and breeding mares only. 6. Exclusive of Formosa. 7. Exclusive of Bengal.

7. **Relation to Population.**—In proportion to population, horses are much more numerous in Queensland than in any of the other States. South Australia is next in order, while Tasmania has the smallest number of horses per head. In all the States the number of horses per head of population was somewhat higher in 1909 than in 1900. Particulars for the past ten years are as follows :—

NUMBER OF HORSES PER HEAD OF POPULATION, COMMONWEALTH AND STATES, 1900 TO 1909.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
1900	0.35	0.33	0.92	0.50	0.38	0.18	0.43
1901	0.35	0.32	0.91	0.49	0.38	0.19	0.42
1902	0.32	0.32	0.78	0.49	0.38	0.19	0.39
1903	0.32	0.31	0.78	0.52	0.36	0.19	0.39
1904	0.33	0.31	0.79	0.54	0.37	0.20	0.40
1905	0.34	0.32	0.82	0.57	0.38	0.20	0.41
1906	0.35	0.33	0.85	0.58	0.40	0.21	0.43
1907	0.37	0.34	0.90	0.58	0.43	0.22	0.45
1908	0.37	0.33	0.94	0.58	0.44	0.21	0.45
1909	0.37	0.34	0.97	0.61	0.46	0.22	0.46

§ 3. Cattle.

1. **Purposes for which Raised.**—In all the States of the Commonwealth cattle-raising is carried out on a more or less extensive scale, the main object in certain districts being the production of stock suitable for slaughtering purposes, and in others the raising of profitable dairy herds. The great impetus which the development of the export trade in Australian butter gave to the dairying industry in the Commonwealth led to a considerable increase in the numbers and quality of the dairy herds of the States of Victoria, New South Wales, and Southern Queensland in particular, the sub-tropical portion of Australia being apparently the best adapted to this industry. On the other hand, by far the finest specimens of beef-producing cattle are those raised in the tropical districts of the Commonwealth, *i.e.*, in the northern parts of Queensland, in the Northern Territory of South Australia, and in the Kimberley districts in the north of Western Australia.

2. **Distribution throughout Commonwealth.**—Until 1880 New South Wales occupied the eading position in the Commonwealth group as a cattle-raising State, but in that year Queensland forged ahead and obtained a lead which it has since maintained. The extent of this lead has, however, varied considerably, owing principally to the effects produced by the tick fever and droughts, from both of which causes the Queensland herds suffered more severely than those of the other States. In fact, during the period from 1894, when the number of cattle in Queensland attained its maximum of rather more than 7,000,000, to 1903, when the number recorded was less than 2,500,000, an uninterrupted decline was experienced. During the past six years, however, a rapid improvement has taken place, and the total reached on 31st December, 1909, was over 4,700,000.

The numbers of cattle in the several States at quinquennial intervals from 1860 to 1900 and thence onwards for each year are as follows :—

NUMBER OF CATTLE IN STATES AND COMMONWEALTH, 1860 to 1909.

Year.	N.S.W.	Victoria.	Queensland.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
1860	2,408,586	722,332	432,890	278,265	32,476	83,366	3,957,915
1865	1,961,905	621,337	848,346	158,057	45,148	90,020	3,724,813
1870	2,195,096	721,096	1,076,630	136,832	45,213	101,459	4,276,326
1875	3,134,086	1,054,598	1,812,576	219,240	50,416	118,694	6,389,610
1880	2,580,040	1,286,267	3,162,752	307,177	63,719	127,187	7,527,142
1885	1,317,315	1,290,790	4,162,652	418,140	70,408	138,642	7,397,947
1890	2,091,229	1,782,978	5,558,264	574,032	130,970	162,440	10,299,913
1895	2,150,057	1,795,314	6,822,401	636,824	200,091	162,801	11,767,488
1900	1,983,116	1,602,384	4,078,191	472,428	338,590	165,516	8,640,225
1901	2,047,454	1,623,282	3,772,707	480,777	398,547	168,661	8,491,428
1902	1,741,226	1,644,180	2,543,471	519,163	437,136	177,566	7,062,742
1903	1,880,578	1,665,078	2,481,717	536,580	497,617	185,938	7,247,508
1904	2,149,129	1,685,976	2,722,340	520,379	561,490	201,206	7,840,520
1905	2,337,973	1,737,690	2,963,695	647,631	631,825	206,211	8,525,025
1906	2,549,944	1,804,323	3,413,919	680,095	690,011	211,117	9,349,409
1907	2,751,193	1,842,807	3,892,232	709,354	717,377	215,523	10,128,486
1908	2,955,934	1,574,162	4,321,600	748,368	741,788	205,827	10,547,679
1909	3,027,727	1,549,640	4,711,782	758,080	793,217	199,945	11,040,391

3. **Proportion in each State.**—During the period elapsing between 1900 and 1909 the proportion of cattle in the several States has varied considerably, as shewn hereunder :—

PERCENTAGE OF CATTLE IN EACH STATE ON TOTAL FOR COMMONWEALTH, 1900 TO 1909.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	%	%	%	%	%	%	%
1900	22.95	18.55	47.20	5.47	3.92	1.91	100.00
1901	24.11	19.12	44.43	5.66	4.69	1.99	100.00
1902	24.65	23.28	36.01	7.35	6.19	2.52	100.00
1903	25.95	22.97	34.24	7.40	6.87	2.57	100.00
1904	27.41	21.50	34.72	6.64	7.16	2.57	100.00
1905	27.42	20.38	34.77	7.60	7.41	2.42	100.00
1906	27.27	19.30	36.52	7.27	7.38	2.26	100.00
1907	27.16	18.20	38.43	7.00	7.08	2.13	100.00
1908	28.02	14.92	40.97	7.10	7.04	1.95	100.00
1909	27.42	14.04	42.68	6.87	7.18	1.81	100.00

A comparison of the positions of the several States in 1900 and 1909 shews that, while Queensland's proportion of the Commonwealth herds and those of Victoria and Tasmania suffered diminution, fairly large increases were in evidence in New South Wales, South Australia and Western Australia. The most noticeable increase in proportion is that of Western Australia, from 3.92% in 1900 to 7.18% in 1909.

4. **Imports and Exports of Cattle.**—Although the various products of the cattle-raising industry bulk largely in the export trade of the Commonwealth, the export of live cattle from Australia has never been considerable. The number of cattle imported is also small, consisting, as in the case of horses, mainly of valuable animals for breeding. One effect of this is that although considerably more than twice as many cattle were exported during the past nine years as were imported, the value of imports exceeded the value of exports by no less than £6181. Details are as follows :—

COMMONWEALTH IMPORTS AND EXPORTS OF CATTLE, 1901 to 1909.

Year.	Imports.		Exports.		Net Exports.	
	No.	Value.	No.	Value.	No.	Value.*
		£		£		£
1901	114	3,591	2,413	22,088	2,299	18,497
1902	2,929	49,231	4,489	19,002	1,560	— 30,229
1903	161	9,569	939	9,302	778	— 267
1904	145	7,903	770	7,115	625	— 788
1905	1,022	10,591	1,280	15,451	258	4,860
1906	161	6,762	552	5,373	391	— 1,389
1907	183	10,204	687	8,759	504	— 1,445
1908	112	11,020	953	11,724	841	704
1909	81	5,710	975	9,586	894	3,876
Total for 9 years...	4,908	114,581	13,058	108,400	8,150	— 6,181

* — signifies net imports.

The comparatively large export figures for 1901 and 1902 were due to exports to Natal and Cape of Good Hope.

5. **Interstate Trade in Cattle.**—The trade in cattle between the various States is considerable, the total number transferred from one State to another during 1909 being no less than 365,198, representing an aggregate value of £2,009,900, or about £5 10s. per head. The principal exporting State was Queensland. Details of the interstate trade in cattle during the year are as follows :—

INTERSTATE TRADE IN CATTLE, 1909.

State.	Imports from other States of the Commonwealth.		Exports to other States of the Commonwealth.		Net Interstate Exports.	
	Number.	Value.	Number.	Value.	Number.	Value.
		£		£		£
New South Wales	208,422	1,056,830	111,364	690,781	—97,058	—366,049
Victoria ...	90,531	595,511	81,732	365,781	—8,799	—229,730
Queensland ...	41,796	163,481	145,500	844,667	103,704	681,186
South Australia ...	23,721	184,694	26,598	108,635	2,877	—76,059
Western Australia	333	4,205	...	...	—333	—4,205
Tasmania ...	395	5,179	4	36	—391	—5,143

Note. — signifies net imports.

6. **Cattle Slaughtered.**—Complete returns of the number of cattle slaughtered annually in the Commonwealth are not obtainable, as these particulars are collected in Tasmania for Hobart and Launceston only, and were collected in South Australia for the first time in 1908. Estimates for the missing years for these States have, however, been made, as shewn in the following table :—

CATTLE (INCLUDING CALVES) SLAUGHTERED, COMMONWEALTH AND STATES, 1901 TO 1909.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
1901	335,823	251,477	377,433	72,000	39,424	34,000	1,110,157
1902	288,131	233,206	344,731	72,000	43,882	34,000	1,015,950
1903	275,199	235,284	262,423	73,000	40,501	35,000	921,407
1904	299,089	243,937	210,715	73,000	44,199	35,000	905,940
1905	320,857	249,454	214,462	74,000	51,758	35,000	945,531
1906	358,877	261,034	223,469	75,000	55,034	35,000	1,008,414
1907	380,042	289,709	228,457	60,527	53,505	36,000	1,048,240
1908	376,574	281,087	243,069	71,128	46,975	36,000	1,054,833
1909	411,876	287,548	305,026	86,435	49,716	37,000	1,177,601

For Hobart and Launceston only, the figures for the years 1901 to 1909 were, respectively, 8815, 10,193, 9842, 10,708, 12,035, 10,503, 12,037, 11,907, and 10,059.

7. **Export of Beef Preserved by Cold Process.**—A large export trade in beef preserved by cold process is carried on by the Commonwealth, mainly with South Africa,

the United Kingdom, and the Philippine Islands. The quantities so exported during the five years 1905 to 1909 are as follows:—

QUANTITY OF BEEF PRESERVED BY COLD PROCESS EXPORTED FROM THE COMMONWEALTH, 1905 to 1909.

Country to which Exported.	1905.	1906.	1907.	1908.	1909.	Total for 5 years.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
United Kingdom	1,603,195	1,706,386	8,360,147	12,384,176	52,777,113	76,831,017
Philippine Islands	12,804,318	10,453,286	9,626,173	12,826,444	11,260,779	56,971,000
Natal	18,632,290	8,881,485	8,657,618	2,777,557	1,352,185	40,301,135
Russia	...	10,247,609	10,551,438	6,821,701	...	27,620,748
Cape of Good Hope	6,117,907	5,419,763	10,695,660	1,538,830	345,861	24,118,021
Egypt	1,372,096	1,979,830	1,540,290	1,707,355	2,525,097	9,124,668
Straits Settlements	719,981	736,796	972,507	841,413	1,092,263	4,362,960
Malta	947,363	...	781,382	752,761	856,599	3,338,105
Gibraltar	119,272	1,247,683	345,374	...	130,703	1,843,032
Hong Kong	338,813	188,873	286,499	354,934	220,919	1,390,038
Mauritius	371,077	391,664	...	...	...	762,741
Japan	29,212	121,963	5,283	408,141	102,723	667,322
Ceylon	69,639	148,300	86,688	87,948	56,509	449,084
Hawaiian Islands	...	6,681	4,257	...	105,403	116,341
Other countries	399,923	30,933	137,276	210,256	316,141	1,094,529
Total	43,525,086	41,561,252	52,050,592	40,711,516	71,142,295	248,990,741

The value of the beef preserved by cold process exported from the Commonwealth during the same years is as follows:—

VALUE OF BEEF PRESERVED BY COLD PROCESS EXPORTED FROM THE COMMONWEALTH, 1905 to 1909.

Country to which Exported.	1905.	1906.	1907.	1908.	1909.	Total for 5 years.
	£	£	£	£	£	£
United Kingdom	16,788	15,896	87,903	134,014	533,044	787,645
Philippine Islands	140,350	112,546	108,505	151,076	125,052	637,529
Natal	179,342	83,694	90,884	28,156	14,380	396,456
Russia	...	105,445	112,098	70,358	...	287,901
Cape of Good Hope	56,220	63,185	125,204	18,025	3,871	266,505
Egypt	16,861	22,027	19,135	19,770	26,747	104,540
Straits Settlements	7,553	8,080	11,515	9,820	11,899	48,867
Malta	10,540	...	8,852	7,987	8,690	36,069
Gibraltar	1,490	12,204	4,432	...	1,157	19,283
Hong Kong	3,737	2,347	3,950	3,873	2,144	16,051
Mauritius	3,296	4,665	...	...	...	7,961
Japan	268	1,501	32	4,494	1,139	7,434
Ceylon	1,027	2,258	1,422	1,507	601	6,815
Hawaiian Islands	...	84	96	...	1,067	1,247
Other countries	4,453	523	1,704	2,471	3,419	12,570
Total	441,925	434,455	575,732	451,551	733,210	2,636,873

During the five years under review the largest of Australia's customers for beef preserved by cold process has been the United Kingdom, while the most consistent and the second largest customer has been the Philippine Islands; Natal, Russia, the Cape of Good Hope and Egypt ranked next in order of importance. The exporting States were Queensland, 68,503,154 lbs., valued at £704,550; Victoria, 1,616,977 lbs., valued at £16,714; and New South Wales, 1,022,164 lbs., valued at £11,946.

8. **Comparison with other Countries.**—In the following comparison of the herds of Australia with those of some of the principal cattle-raising countries of the world, the latest available figures have been inserted in each case:—

NUMBER OF CATTLE IN VARIOUS COUNTRIES.

Country.	Date.	No. of Cattle.	Country.	Date.	No. of Cattle.
United States of America	1908	71,099,000	Cape of Good Hope ...	1904	1,954,390
Russian Empire ...	1907	43,507,101	Denmark	1903	1,840,466
British India[1] ...	1907	52,357,895	Belgium	1907	1,812,689
Argentine Republic ...	1908	29,116,625	New Zealand ...	1908	1,773,326
Germany	1907	20,630,544	Bulgaria	1905	1,695,535
Austria-Hungary[2] ...	1895[2]	15,763,622	Netherlands ...	1904	1,690,463
France	1907	13,949,722	Switzerland ...	1906	1,498,144
United Kingdom ...	1908	11,738,792	Japan[4]	1907	1,237,161
Australia	**1909**	**11,040,391**	Algeria	1907	1,081,734
Canada[3]	1908	7,547,582	Ceylon	1908	1,054,102
Italy	1908	6,190,990	Norway	1900	950,201
Uruguay	1905	6,028,980	Servia	1905	943,946
Mexico	1902	5,142,457	Natal	1905	783,887
Sweden	1907	2,628,982	Egypt	1908	737,732
Rumania	1900	2,588,526	Transvaal	1908	662,388
Spain	1908	2,452,197	Orange River Colony	1905	525,372

1. Exclusive of Bengal. 2. Austria 1902, Hungary 1895. 3. Exclusive of British Columbia. 4. Exclusive of Formosa.

9. **Relation to Population.**—The number of cattle per head of population differs considerably in the several States, and is also subject to marked variation from year to year in the same State. Particulars for the past ten years are as follows:—

NUMBER OF CATTLE PER HEAD OF POPULATION, 1900 to 1909.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W.Aust.	Tas.	C'wealth.
1900	1.46	1.34	8.26	1.30	1.88	0.96	2.29
1901	1.49	1.34	7.46	1.31	2.05	0.97	2.22
1902	1.24	1.36	4.98	1.42	2.05	1.00	1.82
1903	1.32	1.38	4.81	1.45	2.19	1.04	1.85
1904	1.47	1.39	5.22	1.40	2.32	1.12	1.97
1905	1.57	1.43	5.61	1.71	2.48	1.14	2.10
1906	1.67	1.46	6.38	1.77	2.64	1.17	2.27
1907	1.75	1.48	7.18	1.81	2.74	1.17	2.43
1908	1.86	1.24	7.82	1.84	2.78	1.11	2.47
1909	1.87	1.19	8.23	1.82	2.90	1.07	2.52

For the Commonwealth as a whole the ratio of cattle to population is 10 per cent. greater for 1909 than for 1900, and has exhibited a continuous increase from 1902 onwards. The excess of the 1909 figures over those for 1900 is in evidence in all the States except Queensland and Victoria, and is most marked in the case of Western Australia. In Queensland the ratio has increased very rapidly during the past six years, and that for 1909 is greater than for any year since 1900. In Victoria the ratio for 1909 is the lowest for the period under review.

§ 4. Sheep.

1. **The Founding of the Commonwealth Pastoral Industry.**—Fortunately for Australia, the suitability of its climate and general conditions for the production of a high class of wool was, at an early date in the history of its settlement, surmised and tested by Captain Macarthur, one of the pioneer sheep-breeders of New South Wales. To the energy of this enterprising pastoralist is due in large measure the rapid and extremely satisfactory development of Australia as a producer of fine wool, and though it would appear that the introduction of the Merino sheep into Australia was not due to Macarthur, a great deal of the credit for having successfully established the pastoral industry in Australia must certainly be his.

2. **Distribution throughout Commonwealth.**—With the exception of a short period in the early sixties, when the flocks of Victoria outnumbered those of the mother State, New South Wales has maintained amongst the Commonwealth group the lead in sheep production which naturally attached to it as the portion of the Commonwealth in which settlement was first effected. From 1878 onwards, the number of sheep in New South Wales has, in every year except 1902 and 1908, represented more than half the total for the Commonwealth, and even in these years it fell but little short of half the total.

The number of sheep in the several States at quinquennial intervals from 1860 to 1900, and for each year onwards to 1909, is as follows:—

NUMBER OF SHEEP, STATES AND COMMONWEALTH, 1860 to 1909.

Year.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Total C'wealth.
1860	6,119,163	5,780,896	3,449,350	2,824,811	260,136	1,700,930	20,135,286
1865	8,132,511	8,835,380	6,594,966	3,779,308	445,044	1,752,719	29,539,928
1870	16,308,585	10,761,887	8,163,818	4,400,655	608,892	1,349,775	41,593,612
1875	25,353,924	11,749,532	7,227,774	6,179,395	881,861	1,731,723	53,124,209
1880	35,398,121	10,360,285	6,935,967	6,463,897	1,231,717	1,796,715	62,186,702
1885	37,820,906	10,681,837	8,994,322	6,643,565	1,702,719	1,648,627	67,491,976
1890	55,986,431	12,692,843	18,007,234	7,050,544	2,524,913	1,619,256	97,881,221
1895	47,617,687	12,791,084	19,856,959	6,604,319	2,295,832	1,523,846	90,689,727
1900	40,020,506	10,841,790	10,339,185	5,283,247	2,434,311	1,683,956	70,602,995
1901	41,857,099	10,673,265	10,030,971	5,060,540	2,625,855	1,792,481	72,040,211
1902	26,649,424	10,504,741	7,213,985	4,922,662	2,704,880	1,672,655	53,668,347
1903	28,656,501	10,336,216	8,392,044	5,350,258	2,600,633	1,597,053	56,932,705
1904	34,526,894	10,167,691	10,843,470	5,874,979	2,853,424	1,557,460	65,823,918
1905	39,506,764	11,455,115	12,535,231	6,202,330	3,120,703	1,583,561	74,403,704
1906	44,132,421	12,937,440	14,886,438	6,661,217	3,340,745	1,729,394	83,687,655
1907	44,461,839	14,146,734	16,738,047	6,873,869	3,684,974	1,744,800	87,650,263
1908	43,370,797	12,545,742	18,348,851	6,952,499	4,097,324	1,728,053	87,043,266
1909	46,202,578	12,937,983	19,593,791	6,475,431	4,731,737	1,734,761	91,676,281

3. **Proportion in the Several States.**—Particulars concerning the relative positions of the several States with respect to the total flocks of Australia, and the variations in such positions which have taken place during the past ten years, are as hereunder.

During the period the proportion of total Commonwealth flocks declined considerably in the case of New South Wales and Tasmania, and in a less marked degree in Victoria and South Australia, while in the case of Queensland and Western Australia a marked advance in proportion was experienced.

PERCENTAGE OF SHEEP IN EACH STATE ON TOTAL FOR COMMONWEALTH, 1900 TO 1909.

Year.	N.S.W.	Vic.	Q'nsland.	S. Aust.	W. Aust.	Tas.	C'wealth.
	%	%	%	%	%	%	%
1900 ...	56.68	15.36	14.64	7.48	3.45	2.39	100.00
1901 ...	58.10	14.82	13.92	7.02	3.65	2.49	100.00
1902 ...	49.66	19.57	13.44	9.17	5.04	3.12	100.00
1903 ...	50.33	18.16	14.74	9.40	4.57	2.80	100.00
1904 ...	52.45	15.45	16.47	8.93	4.33	2.37	100.00
1905 ...	53.10	15.40	16.85	8.33	4.19	2.13	100.00
1906 ...	52.73	15.46	17.79	7.96	3.99	2.07	100.00
1907 ...	50.73	16.14	19.10	7.84	4.20	1.99	100.00
1908 ...	49.83	14.41	21.08	7.99	4.71	1.98	100.00
1909 ...	50.40	14.11	21.37	7.07	5.16	1.89	100.00

4. **Oversea Imports and Exports of Sheep.**—As in the case of cattle, the oversea exports of live sheep from Australia are of comparatively small importance. The principal countries to which such exports have been consigned during recent years are Natal, Cape of Good Hope, Straits Settlements, and New Caledonia. The following are the particulars of the imports and exports for the past nine years :—

COMMONWEALTH IMPORTS AND EXPORTS OF SHEEP, 1901 to 1909.

Year.	Imports.		Exports.		Net Exports.	
	No.	Value.	No.	Value.	No.	Value.
		£		£		£
1901	553	12,134	12,094	12,104	11,541	—30
1902	47,654	66,042	24,296	15,558	—23,358	—50,484
1903	4,727	9,840	18,111	24,468	13,384	14,628
1904	2,614	13,056	7,746	11,219	5,132	—1,837
1905	5,521	24,263	12,090	17,429	6,569	—6,834
1906	11,502	51,403	17,979	48,699	6,477	—2,704
1907	11,759	42,167	11,361	40,040	—398	—2,127
1908	4,020	18,717	13,021	24,452	9,001	5,735
1909	2,775	14,213	5,315	20,243	2,540	6,030
Total for 9 years	91,125	251,835	122,013	214,212	30,888	—37,623

Note. — signifies net imports.

5. **Interstate Trade in Sheep.**—The number and value of the sheep passing from one State to another are considerable, and for 1909 amounted to a total of 3,753,535, valued at £1,891,907, or an average of about 10s. per head. The exporting States were Queensland and New South Wales, whilst the heaviest importing State was Victoria. Details are as follows :—

INTERSTATE TRADE IN SHEEP, 1909.

State.	Imports from other States of the Commonwealth.		Exports to other States of the Commonwealth.		Net Interstate Exports.	
	Number.	Value.	Number.	Value.	Number.	Value.
		£		£		£
New South Wales	1,590,402	746,987	1,862,734	951,277	272,332	204,290
Victoria ...	1,649,839	832,595	841,865	440,016	—807,974	—392,579
Queensland ...	178,714	116,339	908,308	382,139	729,594	265,800
South Australia ...	232,106	102,085	135,442	84,743	—96,664	—17,342
Western Australia	41,299	48,704	...	...	—41,299	—48,704
Tasmania ...	61,175	45,197	5,186	33,732	—55,989	—11,465

Note. — signifies net imports.

6. **Sheep Slaughtered.**—The numbers of sheep slaughtered in the several States during the past nine years are as follows :—

SHEEP (INCLUDING LAMBS) SLAUGHTERED, 1901 to 1909.

Year.	N.S.W.	Victoria.	Q'land.	Sth. Aust.[1]	West Aust.	Tasmania.[2]	C'wealth.
1901	4,519,133	2,469,797	554,705	678,000	428,534	322,000	8,972,169
1902	4,635,850	2,827,938	715,443	681,000	482,882	325,000	9,668,113
1903	3,277,120	2,652,569	453,666	684,000	412,549	332,000	7,811,904
1904	3,058,536	2,305,729	400,688	691,000	499,585	334,000	7,289,538
1905	4,283,631	2,576,316	587,406	700,000	476,010	335,000	8,958,363
1906	4,482,055	2,826,144	449,547	710,000	468,759	335,000	9,271,505
1907	5,185,057	3,226,141	642,740	1,020,355	465,196	336,000	10,875,489
1908	5,201,492	3,309,865	705,776	1,213,168	423,056	340,000	11,193,357
1909	6,390,486	3,708,512	1,076,718	1,336,037	491,103	344,000	13,346,856

1. Estimated for years 1901 to 1906. 2. Estimated.

For Hobart and Launceston only the figures for the years 1901 to 1909 were respectively :—101,627, 114,900, 122,223, 109,992, 101,863, 104,081, 107,859, 115,560, and 111,445.

7. **Exports of Mutton and Lamb Preserved by Cold Process.**—Australia's export trade in mutton and lamb preserved by cold process is one which has, in recent years, advanced rapidly, and at the present time amounts to more than £1,200,000 per annum. In all the States considerable attention is now being paid to the breeding of a class of sheep that will best meet the requirements of consumers. Crosses between the Merino and the Lincoln, or between the Merino and the Leicester breeds, have proved exceedingly valuable, as they furnish both a good quality of wool and also an excellent carcase for export purposes. The breeding of Shropshire and Southdown sheep with a view to combining meat production with that of wool is also on the increase. Special attention is being paid to the raising of lambs for the home markets, as it is becoming very widely recognised that with suitable breeds, the export trade in lambs is a very profitable one.

Australia's principal customers in this trade are the United Kingdom and South Africa, while in Egypt and Canada a demand for Australian mutton and lamb has developed in recent years. A regular, though not very extensive, trade is also done with the Philippine Islands. The quantities exported to various countries are as follows :—

QUANTITY OF MUTTON AND LAMB PRESERVED BY COLD PROCESS EXPORTED FROM THE COMMONWEALTH, 1905 to 1909.

Country to which Exported.	1905.	1906.	1907.	1908.	1909.	Total for 5 years.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
United Kingdom	62,767,593	67,251,672	88,676,913	82,341,131	110,138,905	411,176,214
Natal	14,011,235	13,349,876	11,038,858	4,854,974	2,329,085	45,584,028
Cape of Good Hope	6,524,229	5,974,671	3,406,939	468,628	128,944	16,503,411
Canada	196,331	969,352	2,215,533	719,336	1,138,974	5,239,526
Egypt	744,377	1,125,423	589,210	610,269	455,599	3,524,878
Philippine Islands	677,221	552,233	791,154	673,867	682,116	3,376,591
Malta	659,171	...	864,062	487,586	630,313	2,641,132
Straits Settlements...	382,101	243,508	511,813	471,634	568,684	2,177,740
Hong Kong	302,077	166,059	270,325	319,382	323,113	1,380,956
Hawaiian Islands	...	220,586	196,505	234,412	255,051	906,554
Gibraltar	225,659	285,510	168,453	...	67,190	746,812
Ceylon	145,078	151,549	172,504	156,291	117,141	742,563
Japan	11,284	86,612	35,690	89,805	22,789	246,180
Other Countries	211,988	315,334	289,798	180,299	57,735	1,055,154
Total	86,858,344	90,692,385	109,227,757	91,607,614	116,915,639	495,301,739

The corresponding particulars concerning the values of the exports are :—

VALUES OF FROZEN MUTTON AND LAMB EXPORTED FROM THE COMMONWEALTH, 1905 to 1909.

Country to which Exported.	1905.	1906.	1907.	1908.	1909.	Total for 5 years.
	£	£	£	£	£	£
United Kingdom ...	834,629	839,360	1,141,718	1,115,908	1,161,475	5,093,090
Natal	156,950	142,031	119,667	50,218	22,338	491,204
Cape of Good Hope ...	79,294	65,801	39,631	5,075	1,240	191,041
Canada	2,792	12,260	30,216	10,257	14,646	70,171
Egypt	8,580	12,674	7,760	7,801	4,987	41,802
Philippine Islands ...	7,442	6,309	8,674	8,056	6,059	36,540
Malta	7,276	...	9,437	5,526	6,262	28,501
Straits Settlements ...	4,514	2,579	5,711	5,261	5,488	23,553
Hong Kong	3,473	1,906	3,011	3,487	2,997	14,874
Hawaiian Islands ...	...	3,282	3,275	2,927	2,994	12,478
Gibraltar	2,765	2,974	1,955	...	700	8,394
Ceylon	1,774	1,713	2,802	1,722	1,096	9,107
Japan	132	917	884	891	195	2,519
Other Countries ...	2,348	3,314	3,261	1,978	558	11,459
Total	1,111,969	1,095,120	1,377,502	1,219,107	1,231,035	6,034,733

8. **Comparison with other Countries.**—As regards the size of its flocks and the quantity and quality of wool produced, Australia occupies the foremost position amongst the sheep-raising countries of the world. The following comparison gives the latest available figures relative to the number of sheep in the principal wool-producing countries :—

NUMBER OF SHEEP IN VARIOUS COUNTRIES.

Country.	Date.	No. of Sheep.	Country.	Date.	No. of Sheep.
Australia	**1909**	**91,676,281**	Germany	1907	7,703,710
Argentine Republic ...	1908	67,211,754	Rumania	1900	5,655,444
Russian Empire[1] ...	1908	58,378,005	Mexico	1902	3,424,430
United States of America	1908	56,084,000	Servia	1905	3,066,231
United Kingdom ...	1908	31,332,400	Canada[4]	1908	2,831,404
New Zealand	1909	23,792,947	Transvaal	1908	2,810,053
British India[2]	1907	18,029,800	British East Africa ...	1904	2,100,000
France	1907	17,460,284	Sweden	1907	1,021,727
Cape of Good Hope ...	1907	17,153,013	Norway	1900	998,819
Spain	1908	16,119,051	Denmark	1903	876,830
Uruguay	1905	13,915,796	Natal	1905	769,601
Italy	1908	11,160,420	Falkland Islands ...	1907	695,747
Austria-Hungary[3]	1895 / 1902	10,925,027	Netherlands ...	1904	606,785
			Iceland	1904	495,190
Algeria	1907	9,314,515	Uganda	1907	457,600
Bulgaria	1905	8,131,004	Belgium ...	1895	235,722
Orange River Colony	1907	8,020,308	Switzerland ...	1906	209,997

1. Including goats. 2. Exclusive of Bengal. 3. Austria 1902, Hungary 1895. 4. Exclusive of British Columbia.

9. **Relation to Population.**—The relation of the flocks of the several States to the populations at the end of each of the past ten years is as follows:—

NUMBER OF SHEEP PER HEAD OF POPULATION.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
1900	29.42	9.06	20.94	14.59	13.53	9.74	18.75
1901	30.44	8.81	19.83	13.84	13.53	10.28	18.83
1902	18.99	8.67	14.12	13.43	12.68	9.43	13.82
1903	20.08	8.55	16.28	14.51	11.46	8.90	14.50
1904	23.69	8.40	20.79	15.76	11.78	8.64	16.52
1905	26.48	9.40	23.74	16.40	12.25	8.74	18.36
1906	28.91	10.50	27.82	17.35	12.76	9.60	20.31
1907	28.34	11.33	30.90	17.51	14.09	9.48	20.88
1908	27.25	9.87	33.22	17.07	15.34	9.30	20.36
1909	28.49	9.93	34.22	15.56	17.30	9.28	20.96

§ 5. Wool.

1. **Importance of Wool Production.**—The chief contributing factor to the pastoral wealth of Australia is the production of wool, the value of the output for the year 1909 being about £28,000,000. Most of the wool produced in the Commonwealth is exported, but with the increased activity of the local woollen mills there has, in recent years, been an increasing quantity used in Australia, although even now the quantity so used represents less than 1¼ per cent. of the whole clip.

2. **Greasy and Scoured Wool.**—In the returns of imports and exports of wool furnished to the Customs Department the quantities are usually shewn as "greasy," or as "scoured and washed," but for the purposes of comparing the clips of the several States or of the Commonwealth as a whole for a series of years, it is convenient to have the total production expressed in terms of greasy wool.

The total quantity of Australian wool, scoured and washed before export, is on the average somewhat less than 25 per cent. of the total clip. The ratio of loss of weight in scouring varies largely with season, locality, breed, and condition. It seems preferable to express "scoured and washed" wool in terms of "greasy" rather than *vice versa*, since the absolute error arising from any uncertainty as to the average loss of weight has thus the least effect.

3. **Total Production.**—In the following tables, relative to the production of wool in the several States for the five years 1905 to 1909, wool returned as "scoured and washed" has been converted into the estimated equivalent amount of "greasy" on the assumption that two pounds of "greasy" wool are on the average required to produce one pound of "scoured and washed." An allowance has also been made for the quantity of wool exported on sheepskins. On this basis the estimated total production of wool (in the grease) in the several States of the Commonwealth for the years 1905 to 1909 may be said to be as in the following table:—

PRODUCTION OF WOOL, ESTIMATED AS "GREASY," COMMONWEALTH AND STATES, 1905 TO 1909.

State.	1905.	1906.	1907.	1908.	1909.
	lbs.	lbs.	lbs.	lbs.	lbs.
New South Wales	302,494,870	332,380,646	375,224,448	344,550,707	379,388,356
Victoria	74,746,552	78,258,113	120,017,787	93,999,156	112,102,445
Queensland	72,323,361	88,068,089	104,173,964	115,283,309	127,531,834
South Australia	41,221,437	48,928,116	57,830,794	52,040,731	56,415,539
Western Australia	19,523,003	17,437,645	22,013,541	22,450,624	30,048,360
Tasmania...	11,752,777	12,600,822	10,878,478	13,859,755	12,550,598
Commonwealth	522,062,000	577,673,431	690,139,012	642,184,282	718,037,132

4. **Wool Locally Used.**—Of this production the quantity used in the local manufactories of the several States of the Commonwealth was approximately as follows:—

LOCALLY USED WOOL, ESTIMATED AS "GREASY," COMMONWEALTH AND STATES, 1905 TO 1909.

State.	1905.	1906.	1907.	1908.	1909.
	lbs.	lbs.	lbs.	lbs.	lbs.
New South Wales	729,470	836,730	963,408	1,020,456	1,095,136
Victoria	4,493,041	4,765,687	5,600,873	6,152,250	5,239,806
Queensland	224,860	253,842	211,362	224,460	301,078
South Australia	376,615	387,264	603,848	672,112	634,250
Western Australia	...	...	...	...	...
Tasmania	1,067,050	1,005,628	929,572	1,244,879	991,388
Commonwealth	6,891,036	7,249,151	8,309,063	9,314,157	8,261,658

5. **Bounties on Combed Wool or Tops Exported.**—Under the Bounties Act 1907, bounties are payable on combed wool or tops exported from the Commonwealth provided they were produced therein. The maximum amount which may be paid in any one year is £10,000. For the three years commencing 1st January, 1909, the rate of bounty granted is 1½d. per lb.; and for the two years commencing 1st January, 1912, 1d. per lb. is payable. During the year 1908-9, an amount of £326 was paid in bounties, while in 1909-10 the amount so distributed was £4933. The quantities of wool on which these amounts were paid were 52,085 and 789,216 lbs. respectively.

6. **Exports of Wool.**—Nearly half of the exports of wool from the Commonwealth are despatched to the United Kingdom, the other leading consignees being France, Germany, Belgium, and the United States of America. The following table shews for the years 1905 to 1909, the quantities of "greasy" wool exported from the Commonwealth to the principal countries of destination:—

COMMONWEALTH EXPORTS OF WOOL IN THE GREASE, 1905 to 1909.

Country to which Exported.	1905.	1906.	1907.	1908.	1909.	Total for 5 Years.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
United Kingdom	167,675,702	193,746,722	227,246,663	225,336,019	210,353,060	1,024,352,166
France	95,812,717	85,755,279	130,937,517	104,210,690	128,402,229	545,118,432
Germany	62,727,286	56,479,224	71,423,340	80,073,180	102,160,121	372,863,151
Belgium	35,213,749	53,972,671	56,605,510	37,557,258	47,381,739	230,730,927
United States of America ...	14,996,174	21,090,888	18,401,395	20,430,274	32,846,145	107,764,876
Japan	453,645	2,465,742	5,905,962	1,972,449	5,320,455	16,118,253
Italy	3,085,474	1,184,080	1,546,395	1,548,760	1,915,544	9,280,253
India	91,431	162,724	212,759	394,236	271,030	1,132,180
Canada	138,416	173,944	264,513	254,300	157,263	988,436
New Zealand	197,948	183,845	55,208	62,775	135,954	635,730
Other Countries	27,882	144,471	157,633	6,168	76,673	412,827
Total...	380,420,424	415,353,590	512,756,895	471,846,109	529,020,213	2,309,397,231

Similar particulars concerning the exports of "scoured and washed" wool are as follows:—

COMMONWEALTH EXPORTS OF "SCOURED AND WASHED WOOL," 1905 to 1909.

Country to which Exported.	1905.	1906.	1907.	1908.	1909.	Total for 5 Years.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
United Kingdom	28,469,808	35,301,652	38,037,138	46,401,114	34,168,844	182,378,556
France	13,816,332	11,290,425	13,607,538	9,383,368	16,651,577	64,749,240
Germany	6,897,390	6,905,930	8,649,996	9,104,503	14,583,296	46,141,115
Belgium	5,556,547	9,098,036	9,288,704	5,157,465	7,661,482	36,762,234
United States of America ...	...	...	...	645	151,309	151,954
Japan	1,579,164	2,106,820	2,490,953	722,217	635,722	7,534,876
Italy	168,444	99,663	85,937	65,361	148,695	568,100
India	64,198	68,007	151,851	70,828	74,876	429,760
Canada	781	...	...	...	...	781
New Zealand	6,266	18,624	1,770	5,871	3,972	36,503
Other Countries	216,493	138	4,178	4,122	2,646	227,577
Total...	56,775,423	64,889,295	72,318,065	70,915,494	74,082,419	338,980,696

The figures for 1909 include for the first time an export of tops, amounting to 496,492 lbs. and valued at £58,638. This has been included in the above tables with scoured and washed wool.

The total value of the wool exported from the Commonwealth to each of the various countries during the five years under review was:—

TOTAL VALUE OF WOOL EXPORTED FROM THE COMMONWEALTH, 1905 to 1909.

Country to which Exported.	1905.	1906.	1907.	1908.	1909.	Total for 5 Years.
	£	£	£	£	£	£
United Kingdom	8,750,240	10,706,181	12,933,800	12,022,541	10,562,929	54,975,691
France	5,053,870	4,577,034	7,004,581	4,407,940	5,594,983	26,638,408
Germany	3,143,614	2,962,586	4,117,394	3,632,708	5,006,623	18,862,925
Belgium	1,905,822	3,113,778	3,417,193	1,742,639	2,230,206	12,409,638
United States of America	647,296	912,679	815,254	881,172	1,691,389	4,947,790
Japan	140,704	279,860	481,771	125,408	264,630	1,292,373
Italy	143,995	58,971	77,413	67,021	97,756	445,156
India	7,928	12,084	20,115	21,708	16,657	78,492
Canada	5,459	8,215	11,903	10,873	7,748	44,198
New Zealand	5,218	8,565	2,860	1,669	6,637	24,949
Other Countries	18,070	5,816	9,546	557	3,552	37,541
Total	19,822,216	22,645,769	28,891,830	22,914,236	25,483,110	119,757,161

7. **Care needed in Comparing Clips.**—The Customs returns, from which statistics of wool production are usually compiled, do not furnish a reliable indication of increase or decrease in successive clips, since in each case they relate to the year ended 31st December. Ordinarily, therefore, they include for any year imports and exports of wool belonging to two distinct clips. A further defect in the comparability of successive clips arises as follows:—Owing to climatic or other conditions the time of shearing may be so far delayed that one clip may include almost thirteen months' growth of wool, while the succeeding one may include little more than eleven months' growth. An instance of this occurred in some portions of the Commonwealth in connection with the clips of 1906 and 1907. The shearing in the former case was somewhat late, while in the latter it took place at the usual time, the result being that the 1906 clip was above and that of 1907 below the normal.

Similar circumstances have operated to make the 1909 clip somewhat higher and the 1910 clip somewhat lower than would have been the case had the interval between shearings been exactly a year.

8. **Wool-producing Countries in Southern Hemisphere.**— The next table, compiled by Messrs. Helmuth Schwartze and Co., the well-known firm of English wool

brokers, furnishes interesting evidence of the relative importance of the three great wool-producing countries of the Southern Hemisphere. The figures given represent for the respective years the imports of wool into Europe and North America :—

IMPORTS OF WOOL INTO EUROPE AND NORTH AMERICA.

Year.	Commonwealth and New Zealand.	Cape of Good Hope.	River Plate.	Total
	Bales.	Bales.	Bales.	Bales.
1901	1,745,000	217,000	532,000	2,494,000
1902	1,699,000	234,000	512,000	2,445,000
1903	1,451,000	234,000	558,000	2,243,000
1904	1,371,000	201,000	476,000	2,048,000
1905	1,633,000	209,000	488,000	2,330,000
1906	1,833,000	238,000	487,000	2,558,000
1907	2,103,000	287,000	478,000	2,868,000
1908	2,072,000	276,000	484,000	2,832,000
1909	2,296,000	380,000	571,000	3,247,000

It will be seen that of the total importations shewn in this table, the Commonwealth of Australia and the Dominion of New Zealand account for about 70 per cent.

9. **England's Importation of Wool.**—The quantity and value of wool imported into the United Kingdom during the year 1909 from the principal wool-producing countries, furnish evidence of the important position which the Commonwealth occupies in the supply of wool to the mother country. This is shewn in the following table :—

IMPORTS OF WOOL INTO THE UNITED KINGDOM, 1909.

Country from which Imported.	Quantity.	Value.	Country from which Imported.	Quantity.	Value.
	lbs.	£		lbs.	£
Australia ...	312,710,067	13,668,466	Germany ...	2,917,594	115,177
New Zealand ...	176,457,150	6,935,431	Peru	2,537,886	100,719
Cape of Good Hope	87,467,251	3,279,816	Egypt	3,161,964	85,788
Argentine Republic	42,208,120	1,630,611	Portugal ...	2,798,673	79,850
British India ...	56,225,193	1,516,123	China	2,225,447	76,036
France	26,956,677	1,506,593	Italy	1,530,586	50,641
Natal	28,429,347	955,438	Netherlands ...	1,290,548	48,281
Chile	23,083,341	723,226	Persia	1,187,780	34,817
Turkey	9,727,855	259,492	Spain	537,205	20,820
Belgium ...	5,559,329	228,591	U.S. of America ...	518,881	17,202
Uruguay ...	4,370,784	173,738	Other Countries ...	2,008,927	65,884
Falkland Islands	4,555,541	157,179			
Russia	4,966,402	156,456	Total ...	803,432,548	31,886,375

It will be seen that of the total importations of wool into the United Kingdom, Australian wool represented about 44 per cent. of both quantity and value.

10. **The Wool Market.**—About 85 per cent. of the wool grown in Australia is now disposed of at the local sales held in Sydney, Melbourne, Geelong, Brisbane, Adelaide, Fremantle, Hobart and Launceston. These sales are attended by buyers from England and America, as well as by representatives of the principal European manufacturing countries. The market for wool, which had been for some years steadily improving, received a severe set-back in the early portion of the season 1907-8 by the disastrous financial crisis which occurred in America soon after the commencement of that season. The result was that buying was restricted, prices fell, and a considerable quantity of wool was withdrawn from sale and held over until the succeeding season. The season

1908-9 consequently opened rather inauspiciously, but, although prices did not reach the high level attained in 1906-7, the demand, particularly in the latter part of the season, was much more spirited than in 1907-8, and the sales must be regarded as having been very satisfactory. The season 1909-10 opened favourably and prices exhibited a distinctly upward tendency, with the result that the price averaged over 20 per cent. more than was obtained during the preceding year.

During the sales of 1909-10 the prices realised for greasy merino wool ranged up to 21d. per lb. for a few lines of extra super. Western District (Victoria) wool, super. to 17½d., good to 14½d., average to 13d., and inferior from 6¾d. to 9½d. Amongst other classes of wool extra super. comebacks brought as high as 18¾d., and super. to 16½d. Super. crossbreds sold up to 16d., fine to 14½d., medium to 11d., and coarse to 10½d. Scoured wool ranged from 17d. to 25¼d.

The average values per lb. of Australian greasy wool according to the export returns for the past nine years have been as follows:—

EXPORT VALUE PER LB. OF AUSTRALIAN GREASY WOOL, 1901 to 1909.

Year ...	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.
Average value per lb. ...	d. 7.27	d. 8.04	d. 8.75	d. 9.30	d. 9.83	d. 10.14	d. 10.73	d. 9.17	d. 9.35

§ 6. Hides and Sheepskins.

1. **Extent of Trade.**—In addition to the hides and sheepskins locally treated in the tanneries of the several States a very considerable export trade is carried on, the total value of the hides and sheepskins exported from Australia during the five years 1905 to 1909 being no less a sum than £9,071,345, or an average of £1,814,269 per annum.

2. **Sheepskins with Wool.**—By far the largest item included in the amount mentioned in the preceding paragraph arises from the value of sheepskins with wool exported, which are shipped principally to France and the United Kingdom. Details concerning the number so exported during the five years 1905 to 1909 are as follows:—

COMMONWEALTH EXPORTS OF SHEEPSKINS WITH WOOL, 1905 to 1909.

Country to which Exported.	1905.	1906.	1907.	1908.	1909.	Total for 5 Years.
	No.	No.	No.	No.	No.	No.
France ...	2,319,157	2,742,973	3,561,771	3,265,111	3,140,764	15,029,776
United Kingdom	2,399,848	2,369,247	2,711,346	3,522,791	3,968,494	14,971,726
Belgium ...	474,327	675,051	957,819	710,902	1,100,023	3,918,122
Germany ...	65,945	48,683	57,909	124,465	57,041	354,043
U.S. of America...	70,424	16,228	27,833	11,041	86,664	212,190
Italy	12,338	5,771	6,906	44,083	27,565	96,663
Canada... ...	11,615	1,450	4,268	...	...	17,333
New Zealand ...	...	1,469	...	225	...	1,694
Other Countries ...	135	65	152	...	234	586
Total ...	5,353,789	5,860,937	7,328,004	7,678,618	8,380,785	34,602,133

The next table furnishes corresponding particulars as to value :—

VALUE OF SHEEPSKINS WITH WOOL EXPORTED FROM THE COMMONWEALTH, 1905 to 1909.

Country to which Exported.	1905.	1906.	1907.	1908.	1909.	Total for 5 Years.
	£	£	£	£	£	£
France	514,091	655,044	760,421	508,477	598,172	3,036,205
United Kingdom	530,562	587,648	628,318	515,937	737,592	3,000,057
Belgium ...	129,151	206,037	243,988	123,456	274,823	977,455
Germany ...	15,242	7,890	10,446	23,338	9,566	66,482
U.S. of America...	17,084	2,740	5,981	1,058	9,836	36,699
Italy	1,252	2,583	2,244	10,621	10,244	26,944
Canada... ...	1,653	335	634	...	...	2,622
New Zealand ...	...	542	...	25	...	567
Other Countries ...	29	13	26	...	63	131
Total ...	1,209,064	1,462,832	1,652,058	1,182,912	1,640,296	7,147,162

3. **Sheepskins without Wool.**—In the case of sheepskins without wool the principal countries to which export takes place are the United Kingdom and the United States of America. Particulars concerning the quantities exported are as follows :—

COMMONWEALTH EXPORTS OF SHEEPSKINS WITHOUT WOOL, 1905 to 1909.

Country to which Exported.	1905.	1906.	1907.	1908.	1909.	Total for 5 Years.
	No.	No.	No.	No.	No.	No.
United Kingdom ...	982,304	1,374,208	2,370,759	1,086,103	1,140,338	6,953,712
United States of America	1,080,072	708,518	219,296	167,460	1,285,946	3,461,292
France	...	...	2,804	101,767	3,315	107,886
New Zealand	1,104	66	2,522	5,040	9,840	18,572
Canada	11,496	...	600	...	1,068	13,164
Germany	378	3,160	684	2,812	...	7,034
Belgium	...	...	1,080	...	...	1,080
Italy	...	...	72	...	...	72
Other Countries ...	...	132	1,020	475	...	1,627
Total	2,075,354	2,086,084	2,598,837	1,363,657	2,440,507	10,564,439

Corresponding details concerning value are given hereunder :—

VALUE OF SHEEPSKINS WITHOUT WOOL EXPORTED FROM THE COMMONWEALTH, 1905 TO 1909.

Country to which Exported.	1905.	1906.	1907.	1908.	1909.	Total for 5 Years.
	£	£	£	£	£	£
United Kingdom ...	58,605	101,030	176,484	62,605	50,077	448,801
United States of America	67,911	50,155	19,191	7,390	57,795	202,442
France	...	...	210	7,477	312	7,999
New Zealand	66	9	248	272	422	1,017
Canada	650	...	37	...	50	737
Germany	27	426	22	184	...	659
Belgium	...	...	103	...	...	103
Italy	...	...	8	...	...	8
Other Countries ...	...	11	72	38	...	121
Total	127,259	151,631	196,375	77,966	108,656	661,887

4. **Hides.**—The Commonwealth trade in hides has now assumed considerable proportions, and during 1909 the total value of hides exported amounted to £412,790. The exports took place principally to the United Kingdom, Belgium, the United States of America, Germany and France. Large quantities of hides are also imported into the Commonwealth, mainly from New Zealand and the Pacific Islands. The total value of hides imported during 1909 was £173,251.

Particulars concerning the export of hides during the past five years are as follows:—

COMMONWEALTH EXPORTS OF HIDES FROM 1905 to 1909.

Country to which Exported.	1905.	1906.	1907.	1908.	1909.	Total for 5 Years.
	No.	No.	No.	No.	No.	No.
United Kingdom	44,436	36,162	78,603	152,107	196,827	508,135
Belgium	33,071	33,551	52,507	63,377	79,977	262,483
Germany	27,360	30,721	22,098	99,745	47,335	227,259
Italy	27,717	26,378	36,749	43,156	11,316	145,316
U.S. of America...	12,922	7,575	10,118	15,012	56,131	101,758
France	6,650	6,675	2,841	20,971	20,546	57,683
Japan	8,410	3,507	5,867	1,670	6,598	26,052
Canada	5,500	3,080	4,586	1,050	3,737	17,953
Austria-Hungary	...	1,534	3,363	5,998	515	11,410
Cape of Good Hope	61	...	100	50	200	411
Other Countries ...	62	1,875	469	24	166	2,596
Total ...	166,189	151,058	217,301	403,160	423,348	1,361,056

In the next table are given particulars relative to the value of hides exported:—

VALUE OF HIDES EXPORTED FROM THE COMMONWEALTH FROM 1905 to 1909.

Country to which Exported.	1905.	1906.	1907.	1908.	1909.	Total for 5 Years.
	£	£	£	£	£	£
United Kingdom	49,008	40,106	72,693	106,619	177,738	446,164
Belgium	39,131	44,662	57,242	54,674	89,547	285,256
Germany	28,907	27,789	21,251	68,413	42,710	189,070
Italy	24,163	26,361	28,702	24,891	8,333	112,450
U.S. of America...	13,784	8,614	7,969	12,079	56,639	99,085
France	6,944	7,434	2,782	15,205	22,805	55,170
Japan	12,427	5,650	11,327	2,235	10,315	41,954
Canada	5,368	3,959	4,795	1,127	3,591	18,840
Austria-Hungary	...	1,795	3,137	5,360	627	10,919
Cape of Good Hope	44	...	100	42	260	446
Other Countries ...	70	2,127	497	23	225	2,942
Total ...	179,846	168,497	210,495	290,668	412,790	1,262,296

The number and value of hides imported into the Commonwealth during the five years 1905 to 1909 are as follows:—

HIDES IMPORTED INTO THE COMMONWEALTH, 1905 to 1909.

Year.	1905.	1906.	1907.	1908.	1909.	Total for 5 Years.
No.	99,066	149,502	183,678	183,362	136,375	751,983
Value ... £	108,637	178,261	220,574	204,358	173,251	885,081

§ 7. Graphical Representation of Pastoral Production.

1. **General.**—As comparatively complete statistics relative to the number of horses, cattle, sheep and pigs are available from 1860, the graphical representation of the increase in numbers for the Commonwealth as a whole, shewn on page 359, covers the period from 1860 to 1909.

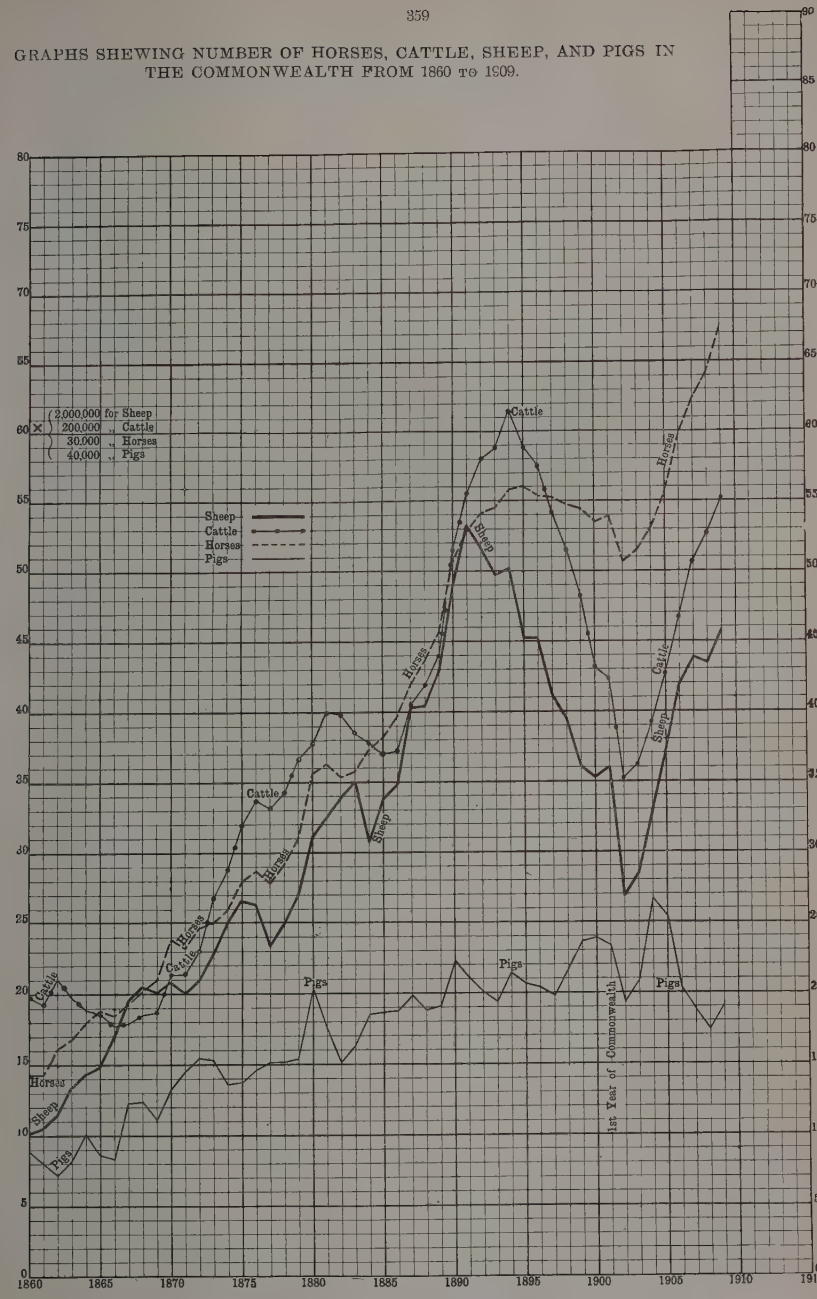
2. **Horses.**—With relatively unimportant fluctuations the number of horses in the Commonwealth increased at a fairly consistent rate until 1895, when a decline set in culminating in the losses of the disastrous drought of 1902. At this latter point the number is practically identical with that for 1890. From 1902 onwards a rapid improvement has been experienced, and in 1906 the previous maximum attained in 1895 was passed. Previous periods of decline were experienced in 1866, 1871, 1877 and 1882.

2. **Cattle.**—The graph for cattle furnishes evidence of rapid increases in number, interrupted by three marked periods of decline, of which the first extended from 1862 to 1866, the second from 1881 to 1885, and the third from 1894 to 1902. So extensive was this last-mentioned decline that the number receded to that of 1879. Since 1902 a rapid recovery has been effected, and the total for 1909 corresponds with that existing at the middle of the year 1897, though still considerably short of the maximum attained in 1894.

4. **Sheep.**—In the case of sheep the graph furnishes evidence of four periods in which the upward movement in number has been arrested or reversed. The first of these occurred between 1868 and 1871, the second between 1875 and 1877, the third during 1884, and the fourth, by far the most serious, between 1891 and 1902. From 1902 to 1907 a rapid increase took place, succeeded by a slight decline in 1908, and a rapid advance in 1909. The point now reached corresponds approximately with that which obtained in the latter portion of 1895.

5. **Pigs.**—The graph for pigs exhibits more numerous fluctuations than that for either of the other classes of live stock represented, and from 1904 to 1908 furnished evidence of a persistent decline. In 1909, however, an upward movement took place, the total for that year being higher than for either of the two preceding years.

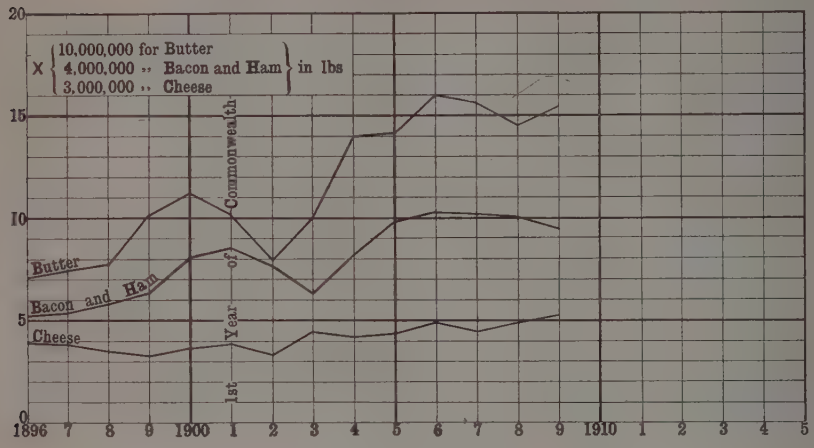
GRAPHS SHEWING NUMBER OF HORSES, CATTLE, SHEEP, AND PIGS IN THE COMMONWEALTH FROM 1860 TO 1909.



(See pages 338, 342, 347, and 450.)

EXPLANATION OF GRAPH.—The base of each small square represents an interval of one year. The totals of the sheep, cattle, horses, and pigs for the Commonwealth are indicated by the several curves or graphs, the vertical side of a small square representing 2,000,000 in the case of sheep; 200,000 for cattle; 30,000 for horses; 40,000 for pigs.

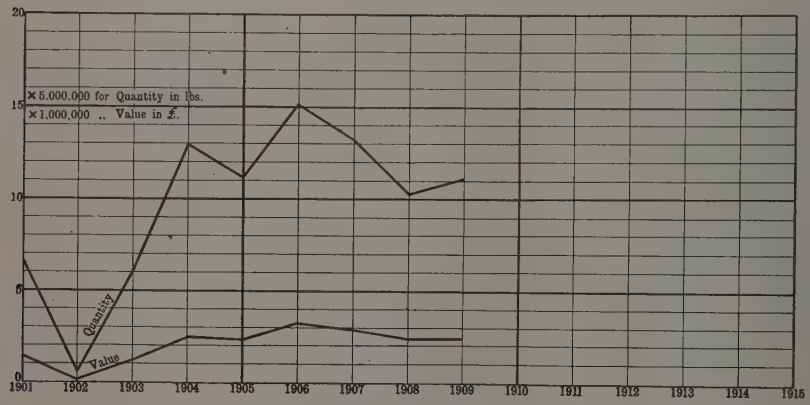
GRAPHS SHEWING THE PRODUCTION OF BUTTER AND CHEESE, AND BACON AND HAM, IN THE COMMONWEALTH, FROM 1896 TO 1909.



(See pages 447 and 450.)

EXPLANATION OF GRAPH.—The base of each small rectangle represents an interval of one year, and the vertical height of each rectangle denotes in the case of butter 10,000,000 lbs.; in the case of bacon and ham, 4,000,000 lbs.; and in the case of cheese, 3,000,000 lbs.

GRAPHS SHEWING THE QUANTITY AND VALUE OF NET EXPORTS OF BUTTER FROM THE COMMONWEALTH, FROM 1901 TO 1909.



(See page 448.)

EXPLANATION OF GRAPH.—The base of each small rectangle represents an interval of one year, and the vertical height of each small rectangle represents 5,000,000 lbs. in weight, or £1,000,000 in value.

SECTION VIII.

AGRICULTURAL PRODUCTION.

§ 1. Introductory.

1. **Early Attempts at Agriculture.**—The instructions issued to Captain Phillip on the 25th April, 1787, directed him, amongst other things, to proceed as soon as possible to the cultivation of the soil "under such regulations as may appear to be necessary and best calculated for securing supplies of grain and provisions." When the settlers landed at Botany Bay, however, it was found that the glowing accounts published in England by members of Captain Cook's expedition of the fertility of the soil in that locality were considerably overdrawn. Even when Phillip and his company moved round to Port Jackson on the 26th January, 1788, matters were for a time in no better case. The ground in the immediate neighbourhood of the settlement was not suitable for the cultivation of cereal crops, and when the time came to cultivate the soil it was found that there were very few who possessed the slightest acquaintance with the art of husbandry.

2. **The First Sowing.**—In his despatch of the 15th May, 1788, Captain Phillip states that it was proposed to sow eight acres with wheat and barley, although, owing to the depredations of field mice and ants, he was doubtful of the success of the crops.

3. **Discovery of Suitable Agricultural Land.**—A branch settlement was formed at Rosehill, on the Parramatta River, towards the close of 1788, and here corn crops were successfully raised. In his despatch of 12th February, 1790, Phillip refers to the harvest at Rosehill at the end of December, 1789, as consisting of 200 bushels of wheat and sixty of barley, in addition to small quantities of oats, Indian corn, and flax. By the year 1791 there were 213 acres under crop in this locality. In 1792 a new settlement was formed at Toongabbie, about three miles westward of Parramatta, where Phillip states "there are several thousand acres of exceeding good ground." The Hawkesbury Valley, which probably contains some of the richest land in the world, was first settled in 1794. For a long time agricultural operations in Australia were restricted to the narrow belt of country between the tableland and the east coast of New South Wales, as it was not until the year 1813 that a passage was discovered across the Blue Mountains to the fertile plains of the west.

§ 2. Progress of Agriculture.

1. **Early Records.**—In an "Account of Live Stock and Ground under Crop in New South Wales, 19th August, 1797," Governor Hunter gives the acreage under crop as follows:—Wheat, 3361 acres; maize, 1527 acres; barley, 26 acres; potatoes, 11 acres; and vines, 8 acres.

At a muster taken in 1808 the following was the return of crops:—Wheat, 6877 acres; maize, 3389 acres; barley, 544 acres; oats, 92 acres; peas and beans, 100 acres; potatoes, 301 acres; turnips, 13 acres; orchards, 546 acres; and flax and hemp, 34 acres.

By the year 1850 the area under crop had increased to 491,000 acres, of which 198,000 acres were cultivated in what is now the State of New South Wales, and 169,000 acres in Tasmania. At the end of 1850 the area under cultivation in Victoria, which was then the Port Phillip District of New South Wales, was 52,190 acres.

The gold discoveries of 1851 and subsequent years had at first a very disturbing effect on agricultural progress, the area under crop declining from 491,000 acres in 1850 to 458,000 acres in 1854; the area under cultivation in New South Wales decreased by nearly 66,000 acres, while in Tasmania a falling-off of over 41,000 acres was experienced. The demand for agricultural products occasioned by the large influx of population was, however, soon reflected in the increased area cultivated, for at the end of 1858 the land under crop in Australia totalled over a million acres. The largest increase took place in Victoria, which returned an area of 299,000 acres. For the same year South Australia had 264,000 acres in cultivation, Tasmania 229,000 acres, and New South Wales 223,000 acres.

2. **Progress of Cultivation since 1860.**—The following table shews the area under crop in each of the Commonwealth States at quinquennial intervals since 1860 and during each year of the period 1901-10. The area under permanent artificially-sown grasses is excluded in all the States, except for the years 1860-79 in the case of New South Wales, where the acreage cannot be separated. During those years, however, the area laid down under permanent grasses could not have been very large:—

AREA UNDER CROP IN AUSTRALIA, 1860-1 to 1909-10.

Season.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Commonwealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1860-1 ...	260,798	387,282	3,353	359,284	24,705	152,860	1,188,282
1865-6 ...	378,255	448,194	14,414	547,124	38,180	159,547	1,585,714
1870-1 ...	426,976	692,840	52,210	801,571	54,527	157,410	2,185,534
1875-6 ...	451,139	736,520	77,347	1,111,882	47,571	142,547	2,567,006
1880-1 ...	629,180	1,548,809	113,978	2,087,237	57,707	140,788	4,577,699
1885-6 ...	737,701	1,867,496	198,334	2,298,412	60,058	144,761	5,306,762
1890-1 ...	852,704	2,031,955	224,993	2,093,515	69,678	157,376	5,430,221
1895-6 ...	1,348,600	2,413,235	285,319	2,092,942	97,821	212,703	6,450,620
1900-1 ...	2,445,564	3,114,132	457,397	2,369,680	201,338	224,352	8,812,463
1901-2 ...	2,278,370	2,965,681	483,460	2,236,552	217,441	232,550	8,414,054
1902-3 ...	2,249,092	3,246,568	275,383	2,224,593	229,992	246,923	8,472,551
1903-4 ...	2,545,940	3,389,069	566,589	2,256,824	283,752	259,611	9,301,785
1904-5 ...	2,674,896	3,321,785	539,216	2,275,506	327,391	226,228	9,365,022
1905-6 ...	2,840,235	3,219,962	522,748	2,255,569	364,704	230,237	9,433,455
1906-7 ...	2,826,657	3,303,586	559,753	2,157,235	460,825	244,744	9,552,800
1907-8 ...	2,572,873	3,232,523	532,624	2,265,017	493,837	257,028	9,353,902
1908-9 ...	2,717,085	3,461,761	535,900	2,321,812	585,339	269,346	9,891,243
1909-10 ...	3,180,561	3,658,535	606,790	2,530,301	722,086	274,026	10,972,299

The increase in the area under crop during the past nine years has been most marked in the case of New South Wales, the total advancing from 2,445,564 acres in the season 1900-1 to 3,180,561 in 1909-10, an increase of 734,997 acres. During the same period an increase of 544,403 acres was experienced in Victoria, 520,748 acres in Western Australia, 160,621 acres in South Australia, 149,393 in Queensland, and 49,674 acres in Tasmania. The total area under crop in the Commonwealth increased during the period by 2,159,836 acres, and the total for 1909-10 was the highest ever attained by the Commonwealth. The 1909-10 figures were also the highest ever attained by any of the States.

3. **Relation to Population.**—From the following table it will be seen that for the Commonwealth as a whole the area under crop has, during the past nine seasons, increased at a rate which is somewhat greater than that at which the population of the Commonwealth has increased. Only in the case of Western Australia however, has the ratio of area under crop to total population made any very marked advance during the period under review, In South Australia the ratio for 1909-10 was practically identical with that for 1901-2. Details for the nine seasons are as follows:—

TOTAL AREA UNDER CROP PER 1000 OF POPULATION.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901-2	1,671	2,463	964	6,164	1,154	1,349	2,219
1902-3	1,617	2,682	540	6,103	1,117	1,419	2,197
1903-4	1,798	2,804	1,105	6,168	1,282	1,463	2,384
1904-5	1,855	2,751	1,039	6,157	1,384	1,265	2,368
1905-6	1,926	2,656	994	6,020	1,457	1,285	2,348
1906-7	1,872	2,699	1,051	5,660	1,773	1,368	2,337
1907-8	1,659	2,609	988	5,872	1,887	1,433	2,251
1908-9	1,719	2,751	975	5,832	2,213	1,482	2,337
1909-10	1,981	2,848	1,074	6,161	2,665	1,488	2,539

4. **Relation to Total Area.**—The next table furnishes a comparison of the area under crop in the Commonwealth and the several States with the respective total areas. For the Commonwealth as a whole the area under crop represented for 1909-10 only about one acre in every 174. In Victoria the area under crop was about one acre in every 15, in Tasmania one in 61, in New South Wales one in 62, in South Australia one in 229, in Queensland one in 709, and in Western Australia one in 862.

PERCENTAGE OF AREA UNDER CROP TO TOTAL AREA OF EACH STATE AND OF COMMONWEALTH FOR SEASONS 1901-2 to 1909-10.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	%	%	%	%	%	%	%
1901-2	1.147	5.273	0.113	0.387	0.035	1.386	0.442
1902-3	1.132	5.772	0.064	0.385	0.037	1.472	0.445
1903-4	1.282	6.025	0.132	0.390	0.045	1.547	0.489
1904-5	1.347	5.906	0.126	0.393	0.052	1.348	0.492
1905-6	1.430	5.725	0.122	0.390	0.058	1.372	0.496
1906-7	1.423	5.873	0.130	0.372	0.074	1.459	0.501
1907-8	1.295	5.747	0.124	0.392	0.079	1.532	0.491
1908-9	1.368	6.155	0.125	0.401	0.094	1.605	0.520
1909-10	1.601	6.505	0.141	0.437	0.116	1.633	0.576

5. **Artificially-Sown Grasses.**—In all the States considerable areas are devoted to artificially-sown grasses, frequently sown on uncultivated land after burning off. Complete statistics regarding the area under such grasses are available for the whole of the States only since the year 1896, and are as shewn hereunder:—

AREA UNDER SOWN GRASSES, 1896-7 to 1909-10.

Season.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Commonwealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1896-7	384,016	172,582	11,960	20,027	4,044	253,306	845,935
1901-2	467,839	162,954	34,679	23,510	3,711	314,422	1,007,115
1902-3	477,629	565,635	24,286	23,636	3,228	319,090	1,413,504
1903-4	552,501	962,665	15,639	24,118	2,952	343,284	1,901,159
1904-5	607,997	953,543	35,589	24,912	3,964	378,346	2,004,351
1905-6	627,530	1,040,335	40,802	26,082	5,456	404,653	2,144,858
1906-7	697,631	1,095,642	45,990	23,679	6,787	432,128	2,301,857
1907-8	736,080	1,095,471	76,943	34,635	7,990	465,673	2,416,792
1908-9	807,924	1,029,711	82,784	23,297	10,265	491,422	2,445,403
1909-10	888,937	988,671	108,438	23,343	9,017	439,450	2,457,856

The considerable increase in the area of the grass lands of the Commonwealth is due in large measure to the great development of the dairying industry which has taken place during the last ten years, and which is referred to in the succeeding section. The areas contained in the above table relate in most cases to grasses sown for grazing purposes on uncultivated land, generally after burning off, and are consequently not included with "area under crop."

§ 3. Relative Importance of Crops.

1. **Various Crops.**—In the following table are furnished details concerning the areas in the several States under each of the principal crops for the season 1909-10 :—

DISTRIBUTION OF CROPS IN AUSTRALIA, 1909-10.

Crop.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Total for C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Wheat ...	1,990,180	2,097,162	117,160	1,895,738	448,918	37,078	6,586,236
Oats ...	81,452	384,226	2,789	85,346	73,342	71,293	698,448
Maize ...	212,797	19,112	132,313	210	153	...	364,585
Barley—							
Malting ...	8,411	38,762	7,439	27,873	4,342	4,987	91,814
Other ...	6,680	19,841	5,670	14,022	3,680	1,306	51,199
Beans and Peas...	411	9,824	...	7,999	704	15,881	34,819
Rye	5,372	2,399	171	1,531	1,092	1,132	11,697
Other Cereals ...	...	...	...	...	11	...	11
Hay	630,491	864,359	72,298	424,448	158,629	77,804	2,228,029
Green Forage ...	118,960	56,586	100,493	17,226	6,068	6,749	306,082
Grass Seed ...	207	1,595	705	108	...	2,890	5,505
Orchards & other Fruit Gardens	45,892	56,108	15,360	21,760	15,609	24,069	178,798
Vines—							
Productive ...	7,651	20,078	1,617	20,353	2,509	...	52,208
Unproductive...	679	2,690	78	2,088	408	...	5,943
Market Gardens	10,254	10,214	2,677	2,784	3,481	1,720	31,130
Sugar Cane—							
Productive ...	6,480	...	80,095	...	...	...	86,575
Unproductive...	7,603	...	48,083	...	...	...	55,686
Potatoes ...	35,725	62,390	7,708	8,131	1,741	21,375	137,070
Onions... ...	313	6,434	72	336	68	48	7,271
Other Root Crops	672	1,692	3,719	248	121	6,578	13,030
Tobacco ...	959	321	594	...	...	...	1,874
Hops	...	140	...	...	...	944	1,084
All other Crops ...	9,372	4,602	7,749	100	1,210	172	23,205
Total Area ...	3,180,561	3,658,535	606,790	2,530,301	722,086	274,026	10,972,299

2. **Relative Areas of Crops in States.**—Taking the principal crops, *i.e.*, those in the case of which the cultivation amounts to more than 50,000 acres in the Commonwealth, the proportion of each in the various States to the total area under crop for the season 1909-10 is shewn in the next table. In four of the States, viz., New South Wales, Victoria, South Australia, and Western Australia, wheat-growing for grain is by far the most extensive form of cultivation, while in each of these States the hay crop is second in importance. In New South Wales maize ranks third, but in Victoria, South Australia, and Western Australia, and also in the Commonwealth as a whole, the oat crop occupies third position. In Queensland, on the other hand, the three principal crops in the order of importance are maize, sugar cane, and wheat, while in Tasmania hay, oats, and wheat occupy the leading positions. For the Commonwealth as a whole, the wheat, hay, and oat crops represent nearly 87 per cent. of the total area under crop.

PROPORTION OF AREA UNDER CHIEF CROPS, 1909-10.

Crop.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	%	%	%	%	%	%	%
Wheat	62.58	57.32	19.31	74.92	62.17	13.53	60.03
Hay	19.82	23.63	11.91	16.77	21.97	28.39	20.30
Oats	2.56	10.50	0.46	3.37	10.16	26.02	6.37
Maize	6.69	0.52	21.81	0.01	0.02	...	3.32
Green Forage ...	3.74	1.55	16.56	0.68	0.84	2.46	2.79
Orchards and Fruit Gardens	1.44	1.53	2.53	0.86	2.16	8.78	1.63
Barley	0.48	1.60	2.16	1.66	1.11	2.30	1.30
Sugar Cane... ...	0.44	...	21.12	...	...	...	1.30
Potatoes	1.12	1.71	1.27	0.32	0.24	7.80	1.25
Vineyards	0.26	0.62	0.28	0.89	0.40	...	0.53
All Other	0.87	1.02	2.59	0.52	0.93	10.72	1.18
Total ...	100.00	100.00	100.00	100.00	100.00	100.00	100.00

3. **Acreage of Principal Crops, Commonwealth.**—The acreage devoted to each of the principal crops in the whole Commonwealth during the last five seasons is shewn below :—

ACREAGE OF CHIEF COMMONWEALTH CROPS, 1905-6 to 1909-10.

Crop.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.
	Acres.	Acres.	Acres.	Acres.	Acres.
Wheat	6,122,746	5,977,794	5,383,911	5,262,473	6,586,236
Hay	1,574,412	1,654,399	1,811,579	2,452,682	2,228,029
Oats	466,567	581,843	642,814	676,156	698,448
Maize	314,901	325,581	299,579	323,875	364,585
Green Forage	225,879	236,484	439,725	413,511	306,082
Orchards and Fruit Gardens ...	159,724	162,274	169,299	173,388	178,798
Barley	90,945	106,436	131,099	140,243	143,013
Sugar Cane	155,912	153,864	144,763	140,883	142,261
Potatoes	118,533	146,681	143,511	125,685	137,070
Vineyards	64,344	62,546	61,232	59,450	58,151
All other Crops	139,492	144,898	126,390	122,897	129,626
Total	9,433,455	9,552,800	9,353,902	9,891,243	10,972,299

During the period under review the area devoted to the several crops has varied considerably, that under wheat attaining a maximum for the period in the season 1909-10, and a minimum in 1908-9, while hay reached its maximum area in 1908-9 and its minimum in 1905-6. Of the other crops oats, maize, orchards and fruit gardens, and barley attained their maximum averages in 1909-10, green forage in 1907-8, sugar cane and vineyards in 1905-6, and potatoes in 1906-7.

§ 4. Wheat.

1. **Progress of Wheat-Growing.**—(i.) *Acreage.* The area under wheat for grain is given below for each State at various periods since 1860, and is shewn diagrammatically in the graph hereinafter :—

AREA UNDER WHEAT, 1860-1 to 1909-10.

Season.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	West Aust.	Tasmania.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1860-1	128,829	161,252	196	273,672	13,584	66,450	643,983
1865-6	131,653	178,628	2,068	410,608	22,249	73,270	818,476
1870-1	147,997	284,167	2,892	604,761	26,640	57,382	1,123,839
1875-6	133,609	321,401	4,478	898,820	21,561	42,745	1,422,614
1880-1	253,138	977,285	12,632	1,733,542	27,686	50,022	3,054,305
1885-6	264,867	1,020,082	10,093	1,922,555	29,511	30,266	3,277,374
1890-1	333,233	1,145,163	10,390	1,673,573	33,820	32,452	3,228,631
1895-6	596,684	1,412,736	27,090	1,649,929	23,241	64,652	3,774,332
1900-1	1,530,609	2,017,321	79,304	1,913,247	74,308	51,825	5,666,614
1901-2	1,392,070	1,754,417	87,232	1,743,452	94,710	44,084	5,115,965
1902-3	1,279,760	1,994,271	1,880	1,746,842	92,398	40,898	5,156,049
1903-4	1,561,111	1,968,599	138,096	1,711,174	137,946	49,414	5,566,340
1904-5	1,775,955	2,277,537	150,958	1,840,157	182,080	43,091	6,269,778
1905-6	1,939,447	2,070,517	119,356	1,757,036	195,071	41,319	6,122,746
1906-7	1,866,253	2,031,893	114,575	1,686,374	250,283	32,808	5,982,186
1907-8	1,390,171	1,847,121	82,461	1,753,755	279,609	30,794	5,383,911
1908-9	1,394,056	1,779,905	80,898	1,693,501	285,011	29,102	5,262,473
1909-10	1,990,180	2,097,162	117,160	1,895,738	448,918	37,078	6,586,236

The area devoted in the Commonwealth to the production of wheat for grain was higher for the season 1909-10 than for any previous season, exceeding the area for 1904-5, the previous record season, by 316,458 acres, and that for 1908-9 by no less than 1,323,763 acres. The maximum area under wheat for grain was attained by the several States in the following seasons :—New South Wales, and Western Australia, 1909-10 ; Victoria and Queensland 1904-5 ; South Australia 1884-5 ; Tasmania, 1897-8. The average area under wheat in the Commonwealth in the past ten seasons was 5,711,230 acres. The seasons 1904-5, 1905-6, 1906-7, and 1909-10 exceeded this average, while the remaining six seasons fell short of it. According to the preliminary reports available it appears that the area of wheat reaped for grain in 1910-11 will shew a marked advance on that for 1909-10 and will probably exceed 7,000,000 acres.

(ii.) *Yield.* The production during the same period for each State and for the Commonwealth as a whole is given below :—

PRODUCTION OF WHEAT, 1860-1 to 1909-10.

Season.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tasmania.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1860-1	1,581,598	3,459,914	3,136	3,576,593	208,332	1,415,896	10,245,469
1865-6	1,013,863	3,514,227	33,088	3,587,800	231,594	1,273,766	9,654,338
1870-1	999,595	2,870,409	39,787	6,961,164	316,769	896,881	12,084,605
1875-6	1,958,640	4,978,914	97,400	10,739,834	237,171	700,092	18,712,051
1880-1	3,717,355	9,727,369	223,243	8,606,510	332,232	750,040	23,356,749
1885-6	2,733,133	9,170,538	51,598	14,612,876	339,376	524,348	27,431,869
1890-1	3,649,216	12,751,295	207,990	9,399,389	467,389	642,980	27,118,259
1895-6	5,195,312	5,669,174	123,630	5,929,300	188,077	1,164,855	18,270,348
1900-1	16,173,771	17,847,321	1,194,088	11,253,148	774,653	1,110,421	48,353,402
1901-2	14,808,705	12,127,382	1,692,222	8,012,762	956,886	963,662	38,561,619
1902-3	1,585,097	2,569,364	6,165	6,354,912	985,559	876,971	12,378,068
1903-4	27,334,141	28,525,579	2,436,799	13,209,465	1,876,252	767,398	74,149,634
1904-5	16,464,415	21,092,139	2,149,663	12,023,172	2,013,237	792,956	54,535,582
1905-6	20,737,200	23,417,670	1,137,321	20,143,798	2,308,305	776,478	68,520,772
1906-7	21,817,938	22,618,043	1,108,902	17,466,501	2,758,567	651,408	66,421,359
1907-8	9,155,884	12,100,780	693,527	19,135,557	2,925,690	644,235	44,655,673
1908-9	15,483,276	23,345,649	1,202,799	19,397,672	2,460,823	700,777	62,590,996
1909-10	28,532,029	28,780,100	1,571,589	25,133,851	5,602,368	793,660	90,413,597

The wheat harvest of 1909-10 was the largest ever reaped in the Commonwealth, and exceeded by no less than 16,263,963 bushels that of 1903-4, the next largest harvest. The only other occasions on which a yield exceeding 60,000,000 bushels has been reaped were the seasons 1905-6, 1906-7 and 1908-9. The prospects for the forthcoming harvest of 1910-11 are very good, and taking into account the extensive areas reported as being under crop it appears probable that the aggregate yield for the season will exceed 80,000,000 bushels.

(iii.) *Average Yields.* In the next table will be found the average yield of wheat per acre in each of the last nine seasons :—

YIELD OF WHEAT PER ACRE, 1901-2 to 1909-10.

Season.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tasmania.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1901-2	10.64	6.91	19.40	4.60	10.10	21.86	7.54
1902-3	1.24	1.29	3.28	3.64	10.67	21.44	2.40
1903-4	17.51	14.49	17.65	7.72	13.60	15.53	13.32
1904-5	9.27	9.26	14.24	6.53	11.06	18.40	8.70
1905-6	10.69	11.31	9.53	11.46	11.83	18.79	11.19
1906-7	11.69	11.13	9.68	10.36	11.02	19.86	11.10
1907-8	6.59	6.55	8.41	10.91	10.46	20.92	8.29
1908-9	11.11	13.12	14.87	11.45	8.63	24.08	11.89
1909-10	14.34	13.72	13.41	13.26	12.48	21.41	13.73

As the above figures shew, there were remarkable variations in the average yields, chiefly due of course to the vagaries of the season. The season 1902-3 was an especially lean one in all the States except Western Australia and Tasmania. A large proportion of the area sown with wheat had to be ploughed in or else fed off by stock, but the comparatively heavy yields in the succeeding year shew that this additional cultivation

was very beneficial. For the Commonwealth as a whole the average yield per acre for 1909-10 was the best since 1866-7, when, however, the area under wheat was only about one-seventh of the area so cropped in 1909-10.

(iv.) *Relation to Population.* During the past nine seasons the Commonwealth's production of wheat per head of population has varied between 3¼ bushels in 1902-3 and 21 bushels in 1909-10. The State in which wheat-growing occupies the most important position relatively to population is South Australia, which in 1909-10 had a yield which averaged 61¼ bushels per head. Queensland is the State in which the average production of wheat per head is least. Particulars for the past nine seasons are as follows:—

AUSTRALIAN WHEAT PRODUCTION PER 1000 OF POPULATION.

Season.	N.S.W.	Victoria.	Queensland.	South Aust.	West. Aust.	Tasmania.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels	Bushels	Bushels
1901-2	10,860	10,073	3,375	22,082	5,077	5,591	10,168
1902-3	1,140	2,122	12	17,433	4,787	5,041	3,210
1903-4	19,311	23,598	4,753	36,099	8,476	4,324	19,005
1904-5	11,415	17,469	4,141	32,530	8,509	4,435	13,793
1905-6	14,065	19,314	2,163	53,760	9,222	4,332	17,058
1906-7	14,448	18,481	2,081	45,127	10,614	3,642	16,180
1907-8	5,905	9,767	1,287	49,616	11,154	3,592	10,746
1908-9	9,790	18,552	2,189	48,726	9,285	3,856	14,784
1909-10	17,767	22,402	2,781	61,200	20,677	4,310	20,922

2. **Australian and Foreign Wheat Yields.**—In the next table will be found a statement of the average return per acre in the principal wheat-growing countries of the world ranging from Denmark with a maximum of 42 bushels per acre to Russia in Europe with a minimum of 7⅔ bushels per acre. Australia with 13¾ occupies a middle position:—

AVERAGE YIELD OF WHEAT IN VARIOUS COUNTRIES.

Country.	Year.	Average Yield in bushels per acre.	Country.	Year.	Average Yield in bushels per acre.
Denmark	1907	42.10	Australia	1909	13.73
Belgium...	1907	40.35	United States... ...	1908	13.55
Netherlands	1908	35.70	Italy	1904	12.76
United Kingdom ...	1908	32.42	Siberia (Russia) ...	1907	12.34
Germany	1908	29.73	Servia	1905	12.25
Sweden	1907	28.07	Rumania	1908	11.94
New Zealand	1909	27.85	Uruguay	1907	11.02
Austria	1908	20.52	Spain	1907	10.98
Japan	1907	20.30	India	1909	10.95
France	1908	18.99	Bulgaria	1907	9.75
Canada*...	1908	17.01	Caucasia (Russia) ...	1907	9.71
Hungary	1908	16.91	Algeria	1907	9.60
Argentina	1908	14.05	Russia in Europe ...	1907	7.64

*Exclusive of British Columbia.

3. **Wheat Crops of the World.**—The latest available official statistics of the production of wheat in various countries are given in the following table :—

WHEAT YIELDS OF VARIOUS COUNTRIES.

Country.	Year.	Yield in Bushels.	Country.	Year.	Yield in Bushels.
United States ...	1908	644,398,104	United Kingdom ...	1908	53,929,440
Russia in Europe ...	1907	357,470,220	Rumania	1908	53,119,328
France	1908	307,944,120	Algeria	1907	31,251,990
India	1909	283,016,536	Bulgaria	1907	23,538,560
Argentina	1908	192,435,096	Japan	1907	22,087,208
Hungary	1908	157,449,032	Belgium	1907	15,830,230
Italy	1905	155,542,752	Servia	1905	11,258,450
Germany	1908	138,402,640	Mexico	1904	9,390,670
Canada*	1908	112,434,000	New Zealand ...	1909	8,661,000
Spain	1907	100,303,080	Uruguay	1907	6,846,220
Australia	1909	90,413,597	Sweden	1908	6,546,928
Caucasia (Russia) ...	1907	78,999,660	Netherlands ...	1908	4,962,264
Siberia (Russia) ...	1907	72,628,620	Denmark	1908	4,155,968
Austria	1908	60,695,008			

*Exclusive of British Columbia.

Various estimates of the total quantity of wheat produced in the world have been made. That furnished by the United States Department of Agriculture gives the following figures for the five years 1904 to 1908 :—

WORLD'S PRODUCTION OF WHEAT.

Year	1904.	1905.	1906.	1907.	1908.
	1,000,000 bushels.	1,000,000 bushels.	1,000,000 bushels.	1,000,000 bushels.	1,000,000 bushels.
Production	3,067	3,229	3,328	3,049	3,084

In this estimate the figures given for Australia and New Zealand relate to the agricultural year ending on 31st March in the year specified.

For the five years referred to the Australian production of wheat aggregated 308,000,000 bushels, thus representing about 2 per cent. of the world's production. The total quantity of wheat produced in the British Empire during the same period of five years was approximately 2,598,000,000 bushels, so that the Australian production of wheat represented about 12 per cent. of that of the British Empire, while the British Empire production represented about 16½ per cent. of the world's total.

4. **Prices of Wheat.**—(i.) *British Wheat.* Since the United Kingdom is the largest importer of Australian wheat, the price of wheat in the British markets is a matter of considerable interest to the local producer. The table below gives the average prices per Imperial quarter realised for British-grown wheat :—

PRICES OF BRITISH WHEAT PER QUARTER, 1861 to 1909.

Year.	Average for Year.	Highest Weekly Average.	Lowest Weekly Average.	Year.	Average for Year.	Highest Weekly Average.	Lowest Weekly Average.
	s. d.	s. d.	s. d.		s. d.	s. d.	s. d.
1861 ...	55 4	61 6	50 0	1904 ...	28 4	30 6	26 3
1871 ...	56 8	60 0	52 6	1905 ...	29 8	32 3	26 8
1881 ...	45 4	55 2	40 9	1906 ...	28 3	30 9	25 9
1891 ...	37 0	41 8	32 3	1907 ...	30 7	36 3	26 0
1901 ...	26 9	27 8	25 8	1908 ...	32 0	35 6	30 5
1902 ...	28 1	31 8	24 10	1909 ...	36 11	44 9	31 4
1903 ...	26 9	30 3	24 11				

(ii.) *Australian and other Wheat.* Generally speaking, Australian wheat shews a grain of bright clear texture, rich in gluten, and of fine milling quality. Its excellence is attested by the high price which it realises in the Home markets. The statement below shews, for the last five years, the average value per Imperial quarter of the wheat imported into the United Kingdom from the chief producing countries:—

AVERAGE PRICE OF FOREIGN WHEAT IMPORTED INTO THE UNITED KINGDOM, 1905 TO 1909.

Country.	Average Price per Imperial Quarter.					Country.	Average Price per Imperial Quarter.				
	1905.	1906.	1907.	1908.	1909.		1905.	1906.	1907.	1908.	1909.
	s. d.	s. d.	s. d.	s. d.	s. d.		s. d.	s. d.	s. d.	s. d.	s. d.
Australia ...	32 4	31 2	33 8	37 7	41 5	Chile ...	30 4	...	36 8	35 1	39 1
Rumania ...	31 0	28 11	30 2	38 5	40 9	U. States—					
British India	29 8	29 4	33 9	37 8	40 8	A. Coast ...	31 9	30 7	33 9	36 3	38 6
Argentina ...	30 7	29 10	31 6	35 6	39 9	P. Coast ...	31 7	30 11	31 9	36 1	38 6
Canada ...	31 8	30 8	34 1	35 1	39 3	Germany ...	31 11	27 7	25 0	33 7	38 3
Russia—						Bulgaria ...	29 4	27 5	25 9	35 10	...
Nthn. Ports	31 2	28 6	32 11	35 5	39 3						
Sthn. Ports	31 9	29 10	32 8	38 3	39 3						

In the next table will be found a statement of the export values of Australian wheat during each of the last nine years:—

EXPORT VALUES OF AUSTRALIAN WHEAT, 1901 to 1909.

Year ...	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.
Price per bushel	2s. 9d.	3s. 1d.	3s. 1d.	3s. 2d.	3s. 5d.	3s. 3d.	3s. 4d.	4s. 1d.	4s. 2d.

The export values here shewn are the average declared values for the successive years at the several ports of shipment in the Commonwealth.

5. **Imports and Exports of Wheat and Flour.**—(i.) *Quantities.* The table hereunder shews the imports, exports, and net exports of wheat and flour during each year of the period 1901-9. For the sake of convenience flour has been expressed at its equivalent in wheat, one ton of flour being taken as equal to 50 bushels of grain. As shewn in this table, the Commonwealth imports of wheat and flour during 1903 were equivalent to 12,607,940 bushels of wheat. This importation was necessitated by the failure of the crop in the preceding season. The principal sources of supply were the United States, which contributed 5,000,000 bushels of wheat and 56,000 tons of flour, the Argentine which sent 3,000,000 bushels of wheat and 2000 tons of flour, and Canada

which sent 57,000 bushels of wheat in addition to 11,000 tons of flour. Wheat to the extent of 134,000 bushels was obtained from India, while Brazil furnished 122,000 bushels. In ordinary seasons the import of wheat and flour is negligible. During the past five years the export has ranged between 20,900,000 bushels in 1908 and 38,600,000 bushels in 1906, the net exports for that period averaging 33,340,000 bushels.

IMPORTS AND EXPORTS OF WHEAT AND FLOUR, COMMONWEALTH, 1901 TO 1909.

Year.	Imports.			Exports.			Net Exports.
	Wheat.	Flour.	Total.	Wheat.	Flour.	Total	
	Bushels.	Eq. Bshls.[1]	Bushels.	Bushels.	Eq. Bshls.[1]	Bushels.	Bushels.
1901	22,992	302,550	325,542	20,260,058	4,840,700	25,100,758	24,775,216
1902	176,133	553,650	729,783	8,999,282	1,659,150	10,658,432	9,928,649
1903	9,114,490	3,493,450	12,607,940	1,530,143	402,500	1,932,643	—10,675,297[2]
1904	618	58,200	58,818	33,346,066	5,247,500	38,593,566	38,534,748
1905	258	55,550	55,808	24,648,182	7,715,850	32,364,032	32,308,224
1906	745	43,800	44,545	30,262,335	8,344,050	38,606,385	38,561,840
1907	2,010	18,700	20,710	28,784,130	8,171,900	36,956,030	36,935,320
1908	142	8,900	9,042	15,027,388	5,840,150	20,867,538	20,858,496
1909	128	4,000	4,128	31,549,498	6,498,450	38,047,948	38,043,820

1. Equivalent in bushels of wheat. 2. — denotes net imports.

(ii.) *Destination of Exported Breadstuffs.* In the next two tables will be found the principal countries to which the Commonwealth exported wheat and flour during each year of the period 1905-9. The countries are as shewn in the Australian Customs returns, but owing to the fact that wheat ships are frequently instructed to call for orders at various African ports, some of these African countries cannot be properly considered as the ultimate destination of the whole of the wheat said to be exported to them.

EXPORTS OF WHEAT FROM THE COMMONWEALTH, 1905 to 1909.

Country to which Exported.	1905.	1906.	1907.	1908.	1909.	Total for Five Years.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
U. Kingdom	16,910,925	20,138,149	21,487,355	11,538,962	26,030,722	96,106,113
Cape of Good Hope ...	3,783,657	4,017,233	3,734,272	2,104,613	3,109,548	16,749,323
Peru ...	1,213,877	1,244,112	1,204,897	253,865	627,417	4,544,168
Chile ...	382,377	2,212,410	568,675	75,617	...	3,239,079
Spain ...	809,785	864,367	...	...	310,957	1,985,109
Natal ...	238,797	145,995	422,433	370,670	125,055	1,302,950
India ...	233	437,317	31,573	485,078	101,135	1,055,336
Japan ...	565,133	40,710	313,419	57	61,448	980,767
Canary Is....	323,882	327,255	...	...	238,410	889,547
Italy ...	11,040	208,528	7,773	...	483,783	711,124
China ...	...	10,487	599,222	...	42	609,751
Egypt ...	...	161,470	179,132	70,045	...	410,647
Belgium ...	24,810	42,442	57,448	40,810	120,237	285,747
New Caledonia ...	128,893	60,563	4,153	722	3,275	197,606
France ...	106,328	27,803	19,103	19,542	24,803	197,579
Philippine I.	3	833	...	...	178,153	178,989
Ceylon ...	18	164,358	4,835	510	308	170,029
Germany ...	15,507	59,960	33,278	...	40,403	149,148
New Zealand	138	548	36,340	31,622	72,130	140,778
Other Countries ...	132,779	97,795	80,222	35,275	21,672	367,743
Total ...	24,648,182	30,262,335	28,784,130	15,027,388	31,549,498	130,271,533

The exports of flour during the same period and the principal countries of destination were as follows :—

EXPORTS OF FLOUR FROM THE COMMONWEALTH, 1905 to 1909.

Country to which Exported.	1905.	1906.	1907.	1908.	1909.	Total for Five Years.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
United Kingdom	54,019	26,796	7,181	13,545	33,128	134,669
Natal	23,910	24,358	20,264	16,751	15,595	100,878
Portuguese East Africa ...	4,410	11,139	22,678	17,689	16,496	72,412
Java	11,890	15,021	17,320	13,492	13,346	71,069
Hong Kong ...	10,269	20,455	25,332	481	1,511	58,048
Philippine Islands	6,442	12,126	16,947	9,790	11,803	57,108
StraitsSettlements	7,680	17,608	18,133	5,665	6,250	55,336
Cape of Good Hope	17,212	13,722	7,944	6,911	8,865	54,654
New Zealand ...	441	1,032	6,427	14,464	5,439	27,803
New Caledonia ...	3,030	3,613	4,293	4,056	3,897	18,889
Mauritius ...	1,681	5,471	2,579	3,461	3,090	16,282
Ceylon	2,105	2,408	2,345	2,716	2,257	11,831
China	414	586	6,479	363	300	8,142
Japan	1,555	4,793	491	1	337	7,177
Fiji	1,093	1,168	1,362	...	1,810	5,433
Guam	4,925	496	...	...	...	5,421
Other Countries ...	3,241	6,089	3,663	7,418	5,845	26,256
Total ...	154,317	166,881	163,438	116,803	129,969	731,408

During the five years under review the export of wheat to the United Kingdom totalled 96,106,113 bushels or about 74 per cent. of the total export for the period. On the other hand, the export of flour to the United Kingdom aggregated only 134,669 tons or about 18 per cent. of the total export. During the five years the heaviest exports of flour have taken place to the United Kingdom, South Africa, Portuguese East Africa, Java, Hong Kong, the Philippine Islands and the Straits Settlements.

(iii.) *Interstate Trade in Wheat.* A fairly considerable trade in wheat is carried on between the several States, the net result for 1909 shewing South Australia and New South Wales as exporters, and Tasmania, Queensland, Victoria, and Western Australia as importers. The total quantity of wheat consigned from the several States to other States of the Commonwealth during 1909 was 1,419,561 bushels. Details for the year are as follows:—

INTERSTATE TRADE IN WHEAT, 1909.

State.	Imports from other States of the C'wealth.		Exports to other States of the Commonwealth.		Net Interstate Exports.*	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Bushels.	£	Bushels.	£	Bushels.	£
New South Wales	347,392	75,614	519,703	96,762	172,311	21,148
Victoria ...	462,903	83,220	280,410	63,187	—182,493	— 20,033
Queensland ...	161,727	36,582	19,510	4,272	—142,217	— 32,310
South Australia ...	1,233	281	594,631	129,248	593,398	128,967
Western Australia	13,568	3,283	3,427	644	— 10,141	— 2,639
Tasmania ...	432,738	95,560	1,880	427	—430,858	— 95,133

* — denotes net imports.

(iv.) *Interstate Trade in Flour.* In the case of flour the importing States are Queensland, Tasmania, and Western Australia, while the exporters are South Australia, Victoria, and New South Wales. For 1909 New South Wales was the heaviest Interstate exporter and Queensland the heaviest importer. The total quantity of flour passing from one State to another in 1909 was 46,495 tons, valued at £475,655, or £10 4s. 7d. per ton. The following table contains particulars for the year 1909:—

INTERSTATE TRADE IN FLOUR, 1909.

State.	Imports from other States of the C'wealth.		Exports to other States of the Commonwealth.		Net Interstate Exports.*	
	Quantity.	Value.	Quantity.	Value.	Quantity	Value.
	Tons.	£	Tons.	£	Tons.	£
New South Wales	10,123	102,814	22,848	239,381	12,725	136,567
Victoria ...	1,052	10,372	9,911	98,390	8,859	88,018
Queensland ...	32,296	332,765	91	869	—32,205	—331,896
South Australia ...	218	2,348	12,637	127,992	12,419	125,644
Western Australia	1,649	16,731	5	43	— 1,644	— 16,688
Tasmania ...	1,157	10,625	1,003	8,980	— 154	— 1,645

* — denotes net imports.

(v.) *Interstate Trade in Bran, Pollard, and Sharps.* Bran, pollard, and sharps, collectively known as wheat offal, represent about 33 per cent. of the total wheat ground, and figure somewhat largely in the interstate exports of Victoria and the interstate imports of Western Australia for 1909. Queensland and South Australia are also interstate importers, and New South Wales and Tasmania exporters. In the case of Tasmania it may be noted that this State appears for the past three years as an importer of wheat and flour and an exporter of wheat offal. Details for 1909 are as follows :—

INTERSTATE TRADE IN BRAN, POLLARD, AND SHARPS, 1909.

State.	Imports from other States of the C'wealth.		Exports to other States of the Commonwealth.		Net Interstate Exports.*	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Bushels.	£	Bushels.	£	Bushels.	£
New South Wales	464,680	24,386	1,045,845	46,084	581,165	21,698
Victoria ...	169,285	8,017	1,508,760	69,666	1,339,475	61,649
Queensland ...	358,895	16,509	255	15	—358,640	—16,494
South Australia	688,650	33,629	463,215	24,643	—225,435	— 8,986
Western Australia	1,393,275	60,551	...	...	—1,393,275	—60,551
Tasmania ...	71,895	3,418	128,605	6,102	56,710	2,684

* — denotes net imports.

(vi.) *Exports of Wheat and Flour.* From the foregoing returns it will be seen that the quantity of Australian wheat exported in the form of flour represents, on the average, somewhat less than 20 per cent. of the total wheat export of the Commonwealth. One cause of this, and probably the chief one, is the fact that Australian wheats are in con-

siderable demand with the English millers for mixing purposes, while the Australian flour has not, up to the present, received that consideration from the English bakers which its admitted qualities undoubtedly merit. Steps which have recently been taken for bringing these qualities before the British public may possibly have the effect of increasing the proportion of wheat exported in the form of flour.

A point of some interest in connection with the export of wheat, and one which bears also on the proportions of wheat and flour exports just referred to, is that concerning the quantity of phosphoric acid which this export has the effect of removing from the Commonwealth, and the necessity which exists for the return to the soil of this substance in some form.

According to an estimate furnished by the chemist to the New South Wales Department of Agriculture (F. B. Guthrie, Esq., F.C.S., etc.), the proportions of milled product from a bushel (60 lbs.) of wheat are, approximately, 42 lbs. of flour, 9 lbs. of bran, and 9 lbs. of pollard, while the percentage of phosphoric acid contained in these products is as follows:—

Flour	0.32	per cent., or	0.13	lbs.	per bushel.
Bran	3.00	„	0.27	„	
Pollard	0.90	„	0.08	„	

The total amount of phosphoric acid contained in a bushel of wheat is, therefore, 0.48 lbs., of which 0.13 lbs. is in the flour and 0.35 lbs. in the offal.

During the past nine years the net exports from the Commonwealth of wheat and its milled products have amounted to 185,088,926 bushels of wheat, 883,627 tons of flour, and 3,767,203 bushels of bran, pollard, and sharps. On the basis of the figures quoted above this export would contain no less than 96,000,000 lbs. of phosphoric acid, the value of which as a fertiliser would be about £600,000.

6. **Value of the Wheat Crop.**—The estimated value of the wheat crop in each State and in the Commonwealth during the season 1909-10 is shewn below :—

VALUE OF THE WHEAT CROP, 1909-10.

State.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Cwlth.
	£	£	£	£	£	£	£
Aggregate value	5,706,410	5,636,103	379,801	4,817,321	1,330,562	178,573	18,048,770
Value per acre	£2/17/4	£2/13/9	£3/4/10	£2/10/10	£2/19/3	£4/16/4	£2/14/10

§ 5. Oats.

1. **Progress of Cultivation.**- Oats comes next in importance to wheat amongst the grain crops cultivated last season, but while wheat grown for grain accounted for more than 60 per cent., oats represented less than 6½ per cent. of the area under crop in the Commonwealth. The progress of cultivation of oats since 1860 is shewn in the table hereunder, and more fully in the graphs hereinafter:—

CULTIVATION OF OATS, 1860-1 to 1909-10.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1860-1	6,535	86,337	7	2,273	507	30,303	125,962
1865-6	10,939	102,817	348	2,872	1,232	28,538	146,746
1870-1	10,683	149,309	122	6,188	2,095	30,946	199,343
1875-6	18,856	124,100	114	3,640	1,256	32,556	180,522
1880-1	17,923	134,089	116	4,355	1,319	19,853	177,655
1885-6	14,117	215,994	208	7,871	1,596	29,247	269,033
1890-1	14,102	221,048	411	12,475	1,934	20,740	270,710
1895-6	23,750	255,503	922	34,098	1,880	32,699	348,852
1900-1	29,383	362,689	385	27,988	4,790	45,073	470,308
1901-2	32,245	329,150	1,535	34,660	9,751	54,089	461,430
1902-3	42,992	433,489	78	50,296	10,334	55,058	592,247
1903-4	51,621	433,638	2,808	57,558	14,568	60,663	620,856
1904-5	40,471	344,019	643	50,630	13,864	43,690	493,317
1905-6	38,543	312,052	533	56,950	15,713	42,776	466,567
1906-7	56,431	380,493	1,236	57,000	28,363	58,320	581,843
1907-8	75,762	398,749	715	66,297	46,667	54,625	642,815
1908-9	59,881	419,869	1,797	78,494	59,461	56,654	676,156
1909-10	81,452	384,226	2,789	85,346	73,342	71,293	698,448

2. **Total Yield.**—The total oat crop of the several States for the same period is furnished in the following table :—

COMMONWEALTH OAT CROP, 1860-1 to 1909-10.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1860-1 ...	98,814	2,633,693	91	52,989	11,925	926,418	3,723,930
1865-6 ...	116,005	2,279,468	4,524	42,642	19,005	688,740	3,150,384
1870-1 ...	119,365	2,237,010	1,586	88,383	39,974	691,250	3,177,568
1875-6 ...	352,966	2,719,795	1,482	60,749	18,840	827,043	3,980,875
1880-1 ...	356,121	2,362,425	2,081	50,070	21,104	439,446	3,231,247
1885-6 ...	279,107	4,692,303	1,006	97,201	23,142	784,325	5,877,084
1890-1 ...	256,659	4,919,325	8,967	116,229	38,791	519,395	5,859,366
1895-6 ...	374,196	2,880,045	10,887	184,012	19,326	906,934	4,375,400
1900-1 ...	593,548	9,582,332	7,855	366,229	86,433	1,406,913	12,043,310
1901-2 ...	687,179	6,724,900	42,208	469,254	163,654	1,702,659	9,789,854
1902-3 ...	351,758	4,402,982	520	620,823	167,882	1,752,745	7,296,710
1903-4 ...	1,252,156	13,434,952	70,713	902,936	258,503	1,621,950	17,541,210
1904-5 ...	652,646	6,203,429	15,137	555,696	226,318	1,178,819	8,832,045
1905-6 ...	883,081	7,232,425	5,858	869,146	283,987	1,200,024	10,474,521
1906-7 ...	1,404,574	8,845,654	28,884	896,166	457,155	1,979,574	13,612,007
1907-8 ...	851,776	5,201,408	9,900	874,388	721,753	1,526,002	9,185,227
1908-9 ...	1,119,558	11,124,940	38,811	1,280,235	739,303	1,946,010	16,248,857
1909-10 ...	1,966,586	7,913,423	50,018	1,209,131	1,248,162	2,347,548	14,734,868

The principal oat-growing State of the Commonwealth is Victoria. During the past ten seasons it has produced about 67 per cent. of the total quantity of oats grown in the Commonwealth; Tasmania, New South Wales, and South Australia come next in order of importance. In New South Wales, Western Australia and Tasmania, the highest production of oats for any season was that of 1909-10, while Victoria and Queensland experienced a maximum yield in 1903-4, and South Australia in 1908-9. For the Commonwealth as a whole the record yield was that of 17,541,210 bushels in the season 1903-4, while the yield of 14,734,868 bushels for 1909-10 ranks third.

3. **Average Yield.**—The average yield per acre of the oat crop of the Commonwealth varies considerably in the different States, being highest in Tasmania and lowest in South Australia. Particulars as to average yield for the past nine seasons are given in the succeeding table:—

AVERAGE YIELD OF OATS PER ACRE.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1901-2 ...	21.31	20.43	27.50	13.54	16.78	31.48	21.22
1902-3 ...	8.18	10.16	6.67	12.34	16.25	31.83	12.32
1903-4 ...	24.26	30.98	25.18	15.69	17.74	26.74	28.25
1904-5 ...	16.13	18.03	23.54	10.98	16.32	26.98	17.90
1905-6 ...	22.91	23.18	10.99	15.26	18.07	28.05	22.45
1906-7 ...	24.89	23.25	23.37	15.72	16.12	33.94	23.39
1907-8 ...	11.24	13.04	13.85	13.19	15.47	27.94	14.29
1908-9 ...	18.70	26.50	21.60	16.31	12.43	34.35	24.03
1909-10 ...	24.14	20.60	17.93	14.17	17.02	32.93	21.10

It will be seen that as in the case of the wheat crop, the smallest average yield per acre for the Commonwealth for the period was that experienced in the season 1902-3, while the largest was that of the succeeding season.

4. **Relation to Population.**—The State in which oat production occupies the most important position in relation to population is Tasmania, the yield for that State representing for 1909-10 about 12¾ bushels per head, as compared with 3½ bushels per head for the Commonwealth as a whole. Particulars for the past nine seasons are furnished in the succeeding table:—

OAT PRODUCTION PER 1000 OF POPULATION.

Season.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tas.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels	Bushels.
1901-2	504	5,586	84	1,293	868	9,879	2,581
1902-3	253	3,637	1	1,703	815	10,076	1,892
1903-4	885	11,114	138	2,467	1,168	9,139	4,496
1904-5	453	5,138	29	1,503	957	6,593	2,234
1905-6	599	5,965	11	2,320	1,135	6,695	2,608
1906-7	930	7,228	54	2,359	1,759	11,068	3,332
1907-8	549	4,198	18	2,267	2,752	8,508	2,210
1908-9	707	8,841	71	3,216	2,789	10,707	3,838
1909-10	1,225	6,160	89	2,944	4,607	12,747	3,410

5. **Value of Oat Crop.**—The estimated value of the oat crop of the several States of the Commonwealth for the season 1909-10 is as follows:—

VALUE OF OAT CROP, 1909-10.

State.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aus.	Tas.	C'wealth.
Aggregate value	£237,630	£857,287	£8,545	£115,875	£156,020	£352,132	£1,727,489
Value per acre ...	£2/18/4	£2/4/8	£3/1/3	£1/7/2	£2/2/7	£4/18/9	£2/9/6

6. **Imports and Exports.**—The production of oats in the Commonwealth has not yet reached such a stage as to admit of a regular export trade in this cereal; in fact in certain years the imports have exceeded the exports, notably in 1903, 1906, and 1908. The quantities and values of oats imported into and exported from the Commonwealth during the nine years 1901 to 1909 are given hereunder:—

COMMONWEALTH IMPORT AND EXPORTS OF OATS, 1901 to 1909.

Year.	Imports.		Exports.		Net Exports.*	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Bushels.	£	Bushels.	£	Bushels.	£
1901	1,526,599	153,674	2,874,334	285,347	1,347,735	131,673
1902	1,037,596	157,981	1,427,620	181,450	390,024	23,469
1903	2,066,365	229,395	184,823	23,305	—1,881,542	— 206,090
1904	185,652	15,921	1,713,578	115,659	1,527,926	99,738
1905	392,400	45,460	882,740	83,479	490,340	38,019
1906	215,330	27,445	154,063	18,559	— 61,267	— 8,886
1907	21,945	2,850	533,485	60,204	511,540	57,354
1908	1,401,870	206,283	67,058	10,594	—1,334,812	— 195,689
1909	320,543	32,607	339,258	35,375	18,715	2,768

* — signifies net imports.

The principal countries from which the Commonwealth imports of oats have been obtained are the Dominion of New Zealand and the South African colonies, while the principal countries to which oats were exported during the period under review were the South African colonies in the earlier, and New Zealand, the United Kingdom, and the Philippine Islands in the later years.

7. **Oatmeal, etc.**—Importations of oatmeal, etc., into the Commonwealth take place principally from the United Kingdom, the United States, and Canada. The total importations of oatmeal, wheatmeal, and rolled oats during 1909 amounted to 714,902 lbs., and represented a value of £8514.

8. **Comparison with other Countries.**—A comparison of the Australian production of oats with that of the leading oat-producing countries of the world, is furnished in the following table :—

PRODUCTION OF OATS IN VARIOUS COUNTRIES, 1908.

Country.	Quantity of Oats produced	Country.	Quantity of Oats produced	Country.	Quantity of Oats produced.
	Bushels.		Bushels.		Bushels
Russian Empire	787,820,000	Austria-Hungary ...	184,079,000	Argentina ...	27,848,000
United States ...	782,618,000	U'd. Kingdom	176,008,000	Netherlands	19,075,000
Germany ...	434,857,000	Sweden ...	70,524,000	New Zealand	18,907,000
France ...	277,003,000	Denmark ...	38,922,000	Rumania ...	16,680,000
Canada ...	250,377,000			**Australia ...**	**16,249,000**

9. **Comparison of Yields.**—The average yield per acre of oats in Australia is a somewhat low one compared with the results obtained in other countries, where the cultivation of this cereal is more extensively carried on. Arranging the countries contained in the foregoing table, with the exception of Denmark, for which particulars are not available, according to the magnitude of the average yield of oats for the year 1908, the results are as follow :—

YIELD OF OATS PER ACRE, 1908.

Country.	Average per Acre.	Country.	Average per Acre.	Country.	Average per Acre.
	Bushels.		Bushels.		Bushels.
Netherlands ...	55.23	Canada	31.53	United States ...	24.20
New Zealand ...	46.46	France	28.78	**Australia... ...**	**24.03**
United Kingdom...	42.22	Argentina ...	28.45	Hungary... ...	21.06
Germany	41.18	Austria	27.39	Russian Empire...	17.23
				Rumania... ...	13.77

10. **Interstate Trade.**—Particulars concerning the interstate trade in oats for the year 1909 are contained in the following table. These shew that Victoria and Tasmania are the largest interstate exporters, while New South Wales is the largest importer of oats:—

INTERSTATE TRADE IN OATS, 1909.

State.	Imports from Other States of the Commonwealth.		Exports to Other States of the Commonwealth.		Net Interstate Exports.*	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Bushels.	£	Bushels.	£	Bushels.	£
New South Wales ...	1,606,593	184,135	29,900	3,373	—1,576,693	—180,762
Victoria	50,445	5,213	1,159,201	125,919	1,108,756	120,706
Queensland ...	136,208	14,474	35	5	— 136,173	— 14,469
South Australia ...	11,058	1,955	116,920	11,565	105,862	9,610
Western Australia...	392,645	38,880	...	...	— 392,645	— 38,880
Tasmania ...	50,785	5,035	941,678	108,830	890,893	103,795

* — signifies net imports.

11. **Price of Oats.**—The average wholesale prices of oats in the markets of the several capitals for the year 1909 are given in the following table:—

AVERAGE WHOLESALE PRICE OF OATS PER BUSHEL.

Particulars.	Sydney.	Melbourne.	Brisbane.	Adelaide.	Perth.	Hobart.
Average price per bushel ...	s. d. 2 5	s. d. 1 11	s. d. 3 5	s. d. 2 2	s. d. 2 7	s. d. 2 2

§ 6. Maize.

1. **States Growing Maize.**—The only States in which maize is at all extensively grown for grain are those of New South Wales and Queensland, the area so cropped in these two States during the season 1909-10 being 345,110 acres, or nearly 95 per cent. of the total for the Commonwealth. Of the balance, Victoria contributed 19,112 acres, South Australia 210 acres, and Western Australia 153 acres. The climate of Tasmania prevents the growing of maize for grain in that State. In South Australia prior to 1908 particulars concerning maize had not been specially asked for on the form used in the collection of agricultural statistics. In all the States maize is grown to a greater or less extent as green forage, particularly in connection with the dairying industry.

2. **Area under Maize.**—The area devoted to the growing of maize for grain in each State, from 1875 onwards, is given in the following table, and the actual fluctuations from year to year are shewn more fully on the graph hereinafter.

The total area under maize in the Commonwealth exceeded 300,000 acres for the first time in the season 1890-1, and although it has fluctuated somewhat since then, it may be considered to have remained practically stationary at about that figure. The greatest divergence occurred in 1903-4, when a record total of 371,906 acres was harvested. The area cropped with maize in New South Wales, which had declined rapidly from a maximum of 226,834 acres in 1903-4 to 160,980 acres in 1907-8, shewed a marked

improvement in 1908-9, when a total area of 180,812 acres was cropped, and a further improvement to 212,797 acres in 1909-10. In Queensland the area appears to be on the increase, and that for 1906-7 was the highest ever attained in that State, while the area cropped in 1909-10 has only twice been exceeded, viz., in 1906-7 and 1903-4. The area under maize in New South Wales in 1909-10 represents less than 7 per cent. of that State's total area under crop, while in the case of Queensland the maize crop represents nearly 22 per cent. of the total.

AREA UNDER MAIZE, STATES AND COMMONWEALTH, 1875-6 to 1909-10.

Season.	N.S.W.	Victoria.	Queensland.	South Aust.	West Aust.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1875-6	117,582	2,346	38,711	...	60	158,699
1880-1	127,196	1,769	44,109	...	32	173,106
1885-6	132,709	4,530	71,741	...	120	209,100
1890-1	191,152	10,357	99,400	...	81	300,990
1895-6	211,104	7,186	100,481	...	23	318,794
1900-1	206,051	9,389	127,974	...	91	343,505
1901-2	167,333	10,020	116,983	...	513	294,849
1902-3	202,437	10,906	89,923	...	109	303,375
1903-4	226,834	11,810	133,099	...	163	371,906
1904-5	193,614	11,394	119,171	...	86	324,265
1905-6	189,353	11,785	113,720	...	43	314,901
1906-7	174,115	11,559	139,806	...	101	325,581
1907-8	160,980	10,844	127,119	*549	87	299,579
1908-9	180,812	14,004	127,655	1,223	181	323,875
1909-10	212,797	19,112	132,313	210	153	364,585

* Particulars for previous years not available.

3. **Total Yield.**—Notwithstanding the fact that the area under maize in the Commonwealth for 1909-10 fell short of that for the season 1903-4, the 1909-10 production established a record, the total attained being 10,770,648 bushels. Only twice previously had a total exceeding ten millions been reached, viz., in the season 1897-8, when 10,036,083 bushels were harvested and in 1906-7, when a total of 10,172,154 bushels was attained. Particulars concerning the yield from 1875 onwards are as hereunder:—

MAIZE CROP, STATES AND COMMONWEALTH, 1875-6 to 1909-10.

Season.	N.S.W.	Victoria.	Queensland.	S. Aust.	W. Aust.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1875-6 ...	3,410,517	37,177	1,006,486	...	1,200	4,455,380
1880-1 ...	4,518,897	49,299	1,409,607	...	896	5,978,699
1885-6 ...	4,336,163	181,240	1,574,294	...	1,417	6,093,114
1890-1 ...	5,713,205	574,083	2,373,803	...	1,526	8,662,617
1895-6 ...	5,687,030	351,891	2,391,378	...	600	8,430,899
1900-1 ...	6,292,745	604,180	2,456,647	...	1,399	9,354,971
1901-2 ...	3,844,993	615,472	2,569,118	...	5,203	7,034,786
1902-3 ...	3,049,269	750,524	1,033,329	...	2,110	4,835,232
1903-4 ...	6,836,740	904,239	1,923,623	...	2,487	9,667,089
1904-5 ...	4,951,132	623,736	2,542,766	...	896	8,118,530
1905-6 ...	5,539,750	641,216	2,164,674	...	428	8,346,068
1906-7 ...	5,763,000	704,961	3,703,374	...	919	10,172,254
1907-8 ...	4,527,852	508,761	3,093,789	*6,263	1,080	8,137,745
1908-9 ...	5,216,038	650,462	2,767,600	19,043	2,136	8,655,279
1909-10 ...	7,098,255	1,158,031	2,508,761	3,361	2,240	10,770,648

* Particulars for previous years not available.

4. **Average Yield.**—In the following table particulars are given of the average yield per acre of the maize crops of the several States for the nine seasons, 1901-2 to 1909-10:—

AVERAGE YIELD OF MAIZE PER ACRE, COMMONWEALTH AND STATES, 1901-2 to 1909-10.

Season.	N.S.W.	Victoria.	Queensland.	S. Aust.	W. Aust.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1901-2 ...	22.98	61.42	21.96	...	10.16	23.86
1902-3 ...	15.06	68.82	11.49	...	19.36	15.94
1903-4 ...	30.14	76.57	14.45	...	15.26	25.99
1904-5 ...	25.57	54.74	21.34	...	10.42	25.04
1905-6 ...	29.26	54.41	19.04	...	9.95	26.50
1906-7 ...	33.10	60.99	26.51	...	9.10	31.24
1907-8 ...	28.13	46.92	24.34	*11.41	12.41	27.16
1908-9 ...	28.85	46.45	21.68	15.57	11.80	26.72
1909-10 ...	33.36	60.59	18.96	16.00	14.64	29.54

* Particulars for previous years not available.

The extraordinarily high average yield obtained in Victoria is due, in large measure, to the fact that the area under maize in that State is comparatively small and is situated in districts that are peculiarly suited to the production of this grain. The yield in New South Wales is appreciably higher than that obtained in Queensland.

5. **Value of Maize Crop.**—The value of the Commonwealth maize crop for the season 1909-10 has been estimated at £1,621,996, made up as follows:—

VALUE OF MAIZE CROP, 1909-10.

State.	New South Wales.	Victoria.	Queensland.	S. Aust.	Western Australia.	Common-wealth.
Aggregate value	£946,430	£172,498	£501,752	£672	£644	£1,621,996
Value per acre	£4 8/11	£8 16/6	£3 15/11	£3 4/	£4 4/2	£4 9/

6. **Relation to Population.**—During the past nine seasons the Commonwealth production of maize has ranged between 1¼ bushels per head of population in 1902-3 and 2½ bushels per head in 1906-7 and 1909-10. The production in Queensland, the State in which the maize yield per head of population is highest, ranged during the same period between 2 bushels per head in 1902-3 and 7 bushels per head in 1906-7. Details for the several States for the nine seasons are as follows:—

MAIZE PRODUCTION PER 1000 OF POPULATION.

Season.	N.S.W.	Victoria.	Q'and.	S. Aust.	W. Aust.	Tas.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels	Bushels.
1901-2	2,820	511	5,125	...	28	...	1,855
1902-3	2,192	620	2,027	...	10	...	1,254
1903-4	4,830	748	3,753	...	11	...	2,478
1904-5	3,433	517	4,898	...	4	...	2,053
1905-6	3,757	529	4,117	...	2	...	2,078
1906-7	3,816	576	6,951	...	4	...	2,490
1907-8	2,920	411	5,740	*16	4	...	1,958
1908-9	3,299	517	5,038	48	8	...	2,044
1909-10	4,420	901	4,439	8	8	...	2,492

* Particulars for previous years not available.

7. **Oversea Imports and Exports.**—Except in the years 1902 and 1903, when, owing to the severe drought experienced in Australia, many of the maize crops failed, the

Commonwealth oversea trade in maize has been practically insignificant. In the former of the years mentioned nearly two million, and in the latter considerably more than a million bushels were imported. In 1908 and 1909 also, owing to the small harvests of seasons 1907-8 and 1908-9, the imports of maize were largely in excess of the exports. Details of imports and exports for the past nine years are as follows:—

COMMONWEALTH IMPORTS AND EXPORTS OF MAIZE, 1901 to 1909.

Year.	Imports.		Exports.		Net Exports.*	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Bushels.	£	Bushels.	£	Bushels.	£
1901 ...	188,423	24,764	533	75	— 187,890	— 24,689
1902 ...	1,910,587	319,859	1,450	351	— 1,909,137	— 319,508
1903 ...	1,346,702	204,484	17,296	2,749	— 1,329,406	— 201,735
1904 ...	35,096	3,018	48,109	5,421	13,013	2,403
1905 ...	9,785	1,922	7,033	985	— 2,752	— 937
1906 ...	24,727	3,243	63,168	9,256	38,441	6,013
1907 ...	31,327	5,541	43,429	6,220	12,102	679
1908 ...	271,723	49,291	2,018	444	— 269,705	— 48,847
1909 ...	628,063	104,367	5,054	999	— 623,009	— 103,368

* — signifies net imports.

The principal countries to which maize has been exported from the Commonwealth are South Africa, New Zealand, and China, while the principal countries from which importations have taken place are the Argentine Republic, New Zealand, the United States, the Pacific Islands, South Africa, and Java.

8. **Prepared Maize.**—A fairly large quantity of corn-flour is imported annually into the Commonwealth, the principal countries of supply being the United Kingdom and the United States. During the year 1909 these importations amounted to 551,734 lbs., and represented a value of £8096.

9. **Maize-growing in other Countries.**—The world's production of maize for the year 1908 has been estimated by the United States Department of Agriculture at 3,372,000,000 bushels, and of this quantity the United States of America was responsible for 2,587,000,000 bushels, or nearly 77 per cent. The other leading maize-producing countries of the world are Austria-Hungary, Argentina, Italy, Rumania, Mexico, and Russia, in the order mentioned.

10. **Interstate Trade in Maize.**—In addition to being the largest producer of maize in the Commonwealth, New South Wales is also the largest importer from the other States. Particulars of the interstate imports and exports are contained in the table given hereunder:—

INTERSTATE TRADE IN MAIZE, 1909.

State.	Imports from other States of the Commonwealth.		Exports to other States of the Commonwealth.		Net Interstate Exports.*	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Bushels.	£	Bushels.	£	Bushels.	£
New South Wales ...	332,239	67,202	36,704	7,675	—295,535	— 59,527
Victoria	37,273	7,896	115,665	23,964	78,392	16,068
Queensland	7,700	1,572	239,244	48,185	231,544	46,613
South Australia ...	5,834	1,296	371	68	— 5,463	— 1,228
Western Australia ...	6,055	1,297	...	...	— 6,055	— 1,297
Tasmania	2,919	636	36	7	— 2,883	— 629

* — signifies net imports.

11. **Price of Maize.**—The average wholesale price of maize in the Sydney market is given in the following table for each of the years 1901 to 1909:—

AVERAGE PRICE OF MAIZE PER BUSHEL.

Year ...	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.
Average price per bushel	s. d. 2 9	s. d. 4 10	s. d. 4 1	s. d. 2 4	s. d. 3 3	s. d. 3 0	s. d. 3 2	s. d. 4 7	s. d. 4 2

§ 7. Barley.

1. **Area under Barley.**—The area devoted to barley in the Commonwealth is one which has fluctuated very considerably, but up to the season 1906-7 the net result of these fluctuations had left it in practically the same position as that which it occupied twenty-six years previously. During the last three seasons, however, a satisfactory advance has been made and the area under barley for 1909-10, viz., 143,013 acres, is the highest ever attained in the Commonwealth. The principal barley-growing State is Victoria, which, for the season 1909-10, accounted for 41 per cent. of the Commonwealth area devoted to this crop. The figures here given relate to the areas harvested for grain; only small areas are cropped for hay, while more considerable quantities are cut for green forage. These, however, are not included in this sub-section. The area under barley for grain in the several States from 1875 onwards is shewn in the following table:—

COMMONWEALTH AREA UNDER BARLEY, 1875-6 to 1909-10.

Season.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tasmania.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres
1875-6	4,817	31,568	613	13,969	5,014	5,939	61,920
1880-1	8,056	68,630	1,499	13,074	6,363	8,297	105,919
1885-6	5,298	74,112	406	16,493	6,178	6,833	109,320
1890-1	4,937	87,751	584	14,472	5,322	4,376	117,442
1895-6	7,590	78,438	721	14,184	1,932	6,178	109,043
1900-1	9,435	58,853	7,533	15,352	2,536	4,502	98,211
1901-2	6,023	32,423	11,775	15,517	2,669	6,104	74,511
1902-3	4,557	37,716	430	21,493	3,783	8,281	76,260
1903-4	10,057	47,760	22,881	28,697	3,609	8,084	121,088
1904-5	14,930	46,089	17,387	23,904	3,251	7,646	113,207
1905-6	9,519	40,938	5,201	26,250	3,665	5,372	90,945
1906-7	7,979	52,816	8,601	28,122	3,590	5,328	106,436
1907-8	11,890	63,074	6,943	37,321	6,019	5,852	131,099
1908-9	9,517	64,648	7,385	44,911	7,308	6,474	140,243
1909-10	15,091	58,603	13,109	41,895	8,022	6,293	143,013

New South Wales, Queensland, and Western Australia shewed substantial increases in area under barley for 1909-10 as compared with the cropping of previous season, while decreases were experienced in Victoria, South Australia, and Tasmania.

2. **Malting and other Barley.**—In recent years the statistics of all the States have distinguished between "malting" and "other" barley. Particulars for the Commonwealth are as follows:—

AREA UNDER MALTING AND OTHER BARLEY, 1909-10.

State.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	Acres.	Acres	Acres.	Acres.	Acres.	Acres.	Acres.
Malting barley	8,411	38,762	7,439	27,873	4,342	4,987	91,814
Other barley ...	6,680	19,841	5,670	14,022	3,680	1,306	51,199
Total ...	15,091	58,603	13,109	41,895	8,022	6,293	143,013

It will be seen that, taking the Commonwealth as a whole, about 64 per cent. of the area devoted to this grain in 1909-10 was cropped with malting barley. The proportion varies considerably in the several States.

3. **Total Yield.**—The total production of barley in the Commonwealth for the season 1909-10 amounted to 2,436,384 bushels, and although falling short of the record yield of 1908-9, it exceeded that of any previous season except 1903-4. Particulars concerning the yields of the several States from 1875 onwards are as follows :—

COMMONWEALTH BARLEY CROP, 1875-6 to 1909-10.

Season.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tasmania.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1875-6	98,576	700,665	12,260	197,315	70,196	165,357	1,244,369
1880-1	163,395	1,068,830	31,433	151,886	89,082	169,156	1,673,782
1885-6	85,606	1,302,854	9,826	218,334	89,581	176,466	1,882,667
1890-1	81,383	1,571,599	12,673	175,583	85,451	99,842	2,026,531
1895-6	96,119	715,592	7,756	140,391	18,691	138,833	1,117,382
1900-1	114,228	1,215,478	127,144	211,102	29,189	116,911	1,814,052
1901-2	103,361	693,851	277,037	243,362	34,723	167,485	1,519,819
1902-3	18,233	561,144	3,595	317,155	46,255	201,133	1,147,515
1903-4	174,147	1,262,923	510,557	487,920	53,227	212,459	2,701,233
1904-5	266,781	874,099	331,772	346,718	37,332	163,194	2,019,896
1905-6	111,266	1,062,139	61,816	505,916	49,497	106,042	1,896,676
1906-7	152,739	1,255,442	158,283	491,246	48,827	141,895	2,248,432
1907-8	75,148	1,059,295	64,881	566,937	76,205	149,186	1,991,652
1908-9	166,538	1,511,181	137,667	825,740	74,433	158,645	2,874,204
1909-10	272,663	1,023,384	193,586	691,424	101,673	153,654	2,436,384

4. **Value of Barley Crop.**—The estimated value of the total barley crop of the Commonwealth for the season 1909-10 was £445,201, the extent to which the several States have contributed to this total being shewn in the following table :—

VALUE OF BARLEY CROP.

State.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tas.	C'wealth.
Total value ...	£56,030	£177,661	£42,021	£119,617	£19,141	£30,731	£445,201
Value per acre	£3/14/3	£3/0/8	£3/4/1	£2/17/1	£2/7/9	£4/17/8	£3/2/3

5. **Relation to Population.**—During the nine seasons 1901-2 to 1909-10, the quantity of barley produced in the Commonwealth has averaged about half a bushel per head of population. For the season 1909-10 the production ranged from about 1⅔ bushels per head in South Australia to one-sixth of a bushel in New South Wales. Details for the period are as follows :—

BARLEY PRODUCTION PER 1000 OF POPULATION.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1901-2	76	576	553	671	184	972	401
1902-3	13	464	7	870	225	1,156	298
1903-4	123	1,008	996	1,333	240	1,197	681
1904-5	184	724	639	938	158	913	511
1905-6	75	876	118	1,350	198	517	469
1906-7	101	1,026	297	1,293	188	793	550
1907-8	48	855	120	1,470	291	832	479
1908-9	105	1,201	251	2,074	281	873	679
1909-10	170	797	343	1,684	375	834	564

6. **Commonwealth Imports and Exports.**—The Commonwealth oversea trade in barley is not extensive, and in most years the imports exceed the exports. In 1902 and 1903 somewhat extensive importations of barley from the United States and New Zealand took place, owing to the shortage in local supply resulting from the severe drought of that period. In 1904, the excellent crop of the season 1903-4 furnished the material for a heavy exportation to Japan, the total exported thither during that year being 551,825 bushels. In 1909 also a fairly heavy export took place, mainly to the United Kingdom. Particulars of the Commonwealth oversea imports and exports of barley for the nine years 1901 to 1909 are contained in the following table:—

COMMONWEALTH IMPORTS AND EXPORTS OF BARLEY, 1901 to 1909.

Year.	Imports.		Exports.		Net Exports.*	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Bushels.	£	Bushels.	£	Bushels.	£
1901 ...	55,508	7,208	17,474	1,942	— 38,034	— 5,266
1902 ...	686,478	123,194	8,267	1,465	—678,211	—121,729
1903 ...	731,494	136,997	14,286	5,561	—717,208	—131,436
1904 ...	246,908	39,012	568,640	65,950	321,732	26,938
1905 ...	124,850	19,672	244,456	28,618	119,606	8,946
1906 ...	210,586	34,468	3,150	562	—207,436	— 33,906
1907 ...	232,154	53,802	38,350	5,533	—193,804	— 48,269
1908 ...	452,462	107,126	1,148	290	—451,314	—106,836
1909 ...	51,332	12,356	188,946	28,774	137,614	16,418

* — signifies net imports.

It will be seen that in only three years out of the nine dealt with have the Commonwealth exports of barley exceeded the imports, viz., in 1904, 1905, and 1909. During the nine years the total importations amounted to 2,791,772 bushels, valued at £533,835, and the total exports to 1,084,717 bushels, valued at £138,695, giving a net importation of 1,707,055 bushels in quantity and £395,140 in value.

In addition to the above, which relates to the unprepared grain, there is a small importation into the Commonwealth of pearl and Scotch barley, mainly from the United Kingdom, Germany, China and Japan. The total imported during 1909 amounted to only 4880 lbs. in weight, with a value of £47.

A more considerable export trade in Australian pearl and Scotch barley is carried on, mainly with the United Kingdom and New Zealand, the total exports for 1909 reaching 1,155,346 lbs. valued at £3573.

7. **Commonwealth Imports and Exports of Malt.**—The importations of malt into the Commonwealth are fairly extensive, the bulk of the supply being obtained from the

United Kingdom, Austria-Hungary, and Germany, but principally from the United Kingdom. Details of imports and exports for the past nine years are given hereunder :—

COMMONWEALTH IMPORTS AND EXPORTS OF MALT, 1901 to 1909.

Year.	Imports.		Exports.		Net Imports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Bushels.	£	Bushels.	£	Bushels.	£
1901	516,135	140,615	...	...	516,135	140,615
1902	293,637	91,410	...	...	293,637	91,410
1903	175,212	54,532	198	76	175,014	54,456
1904	189,500	57,571	787	313	188,713	57,258
1905	170,712	53,247	41	14	170,671	53,233
1906	172,433	55,714	539	85	171,894	55,629
1907	153,415	48,262	1,087	371	152,328	47,891
1908	210,860	67,219	528	199	210,332	67,020
1909	110,563	35,239	470	174	110,093	35,065

8. **Interstate Trade in Barley and Malt.**—Victoria, as well as being the largest grower of barley in the Commonwealth, is also the largest importer from the other States, the supply being chiefly obtained from South Australia, the principal interstate exporter during 1909. In the cases of both pearl barley and malt Victoria was the largest exporter to the other States, while Western Australia was the largest importer of pearl barley, and New South Wales the largest importer of malt.

INTERSTATE TRADE IN BARLEY AND MALT, 1909.

BARLEY (UNPREPARED).

State.	Imports from Other States of the Commonwealth.		Exports to Other States of the Commonwealth.		Net Interstate Exports.*	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Bushels.	£	Bushels.	£	Bushels.	£
New South Wales	168,396	29,156	7,222	1,264	— 161,174	— 27,892
Victoria ...	315,618	56,266	145,058	24,159	— 170,560	— 32,107
Queensland ...	40,376	6,202	580	97	— 39,796	— 6,105
South Australia ...	66	20	377,650	66,996	377,584	66,976
Western Australia	4,904	774	576	83	— 4,328	— 691
Tasmania ...	7,444	1,049	5,718	868	— 1,726	— 181

BARLEY (PEARL AND SCOTCH).

	Lbs.	£	Lbs.	£	Lbs.	£
New South Wales	290,828	1,283	15,662	287	— 275,166	— 996
Victoria ...	100	1	727,949	3,681	727,849	3,680
Queensland ...	84,564	672	...	...	— 84,564	— 672
South Australia ...	174,878	962	15,236	111	— 159,642	— 851
Western Australia	169,729	915	...	...	— 169,729	— 915
Tasmania ...	38,748	246	...	...	— 38,748	— 246

MALT.

	Bushels.	£	Bushels.	£	Bushels.	£
New South Wales	327,528	94,746	5,878	2,093	— 321,650	— 92,653
Victoria ...	738	292	409,345	121,193	408,607	120,901
Queensland ...	28,998	9,152	8,848	2,591	— 20,150	— 6,561
South Australia ...	2,470	745	24,940	7,642	22,470	6,897
Western Australia	83,187	26,724	20	5	— 83,167	— 26,719
Tasmania ...	6,110	1,866	...	1	— 6,110	— 1,865

* — signifies net imports.

9. **Comparison with other Countries.**—In comparison with the barley production of other countries of the world that of Australia appears very small indeed. Particulars for some of the leading countries for the year 1908 are as follows, the Australian figures being added for the sake of comparison:—

PRODUCTION OF BARLEY IN VARIOUS COUNTRIES, 1908.

Country.	Production of Barley.	Country.	Production of Barley.
	Bushels.		Bushels.
Russian Empire ...	366,428,000	France	39,388,000
United States ...	161,687,000	Rumania ...	12,475,000
Germany	134,880,000	Sweden	15,040,000
Austria-Hungary ...	122,105,000	Netherlands ...	3,830,000
United Kingdom ...	61,569,000	**Australia** ...	**2,874,000**
Spain (1907)... ...	51,440,000	New Zealand ...	1,304,000
Canada*	46,762,000		

* Exclusive of British Columbia.

10. **Average Yield.**—The average yield per acre of barley varies considerably in the different States, being as a rule highest in Tasmania and Victoria, and lowest in Western Australia and Queensland. Details for each State for the nine seasons 1901-2 to 1909-10 are given in the following table:—

AVERAGE YIELD PER ACRE OF BARLEY, 1901-2 to 1909-10.

Season.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	West Aust.	Tas.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1901-2 ...	17.16	21.40	23.53	15.68	13.01	27.44	20.40
1902-3 ...	4.00	14.88	8.36	14.76	12.23	24.29	15.05
1903-4 ...	17.32	25.50	22.31	17.00	14.75	26.28	21.94
1904-5 ...	17.87	18.97	19.08	14.50	11.48	21.34	17.84
1905-6 ...	11.69	25.95	11.89	19.27	13.51	19.74	20.86
1906-7 ...	19.14	23.77	18.40	17.47	13.60	26.63	21.12
1907-8 ...	6.32	16.79	9.34	15.19	12.66	25.49	15.19
1908-9 ...	17.50	23.38	18.64	18.39	10.19	24.50	20.49
1909-10 ...	18.07	17.46	14.77	16.50	12.67	24.42	17.04

11. **Price of Barley.**—The average prices of barley in the Melbourne market during each of the years 1903 to 1909 are given in the following table:—

AVERAGE PRICE OF BARLEY PER BUSHEL, 1903 to 1909.

Particulars.	1903.	1904.	1905.	1906.	1907.	1908.	1909.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Malting barley	3 11	3 6	4 0	4 5	4 8	4 10	3 10
Cape barley ...	3 1	1 9	2 7	2 4	2 8	3 8	2 7

§ 8. Other Grain and Pulse Crops.

In addition to the grain crops already specified, the only grain and pulse crops at all extensively grown in the Commonwealth are beans, peas and rye. The total area under the two former for the season 1909-10 was 34,819 acres, giving a total yield of 669,538 bushels, or an average of 19.23 bushels per acre. The States in which the greatest area is devoted to beans and peas are Tasmania, Victoria and South Australia. The total area under rye in the Commonwealth during the season 1909-10 was 11,697 acres, yielding 135,024 bushels, and giving an average of 11.54 bushels per acre. More than 47 per cent. of the rye grown during the season was produced in New South Wales. In addition to these grain crops a small area of rice was for some years cultivated in Queensland. The results obtained, however, have not offered sufficient inducement to growers to continue this crop, and the total area devoted to it declined from 1113 acres in 1892-3 to 7 acres in 1908-9 and disappeared from the records for 1909-10. Should rice-growing ever be seriously taken up in Australia, it is probable that large tracts of country in the northern parts of Western Australia and in the Northern Territory will be found well suited to its cultivation.

§ 9. Potatoes.

1. **Area.**—The principal potato-growing State of the Commonwealth as regards area is Victoria, Tasmania usually ranking second and New South Wales third. For the season 1909-10, however, owing mainly to the prevalence of the Irish potato blight the Tasmanian area fell to 21,375 acres, a lower figure than has been recorded for any season since 1898-9. In consequence of this, the second place for 1909-10 was occupied by New South Wales, Tasmania being third. The area devoted to this crop in the Commonwealth, which has fluctuated somewhat, reached its highest point in the season 1906-7, with a total of 146,681 acres.

The area under potatoes in each State from 1890 onwards is given hereunder :—

COMMONWEALTH AREA UNDER POTATOES, 1890-1 to 1909-10.

Season.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tasmania.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1890-1	19,406	53,818	6,270	6,626	511	20,133	106,764
1895-6	24,722	43,895	9,240	6,448	668	19,247	104,220
1900-1	29,408	38,477	11,060	6,628	1,794	23,068	110,435
1901-2	26,158	40,058	9,948	6,248	1,829	25,444	109,685
1902-3	19,444	49,706	2,899	7,763	2,084	34,625	116,521
1903-4	20,851	48,930	6,732	8,616	1,823	29,160	116,112
1904-5	23,855	46,912	9,771	8,315	1,906	25,948	116,707
1905-6	26,374	44,670	7,170	9,540	2,145	28,634	118,533
1906-7	36,815	55,372	8,031	9,894	2,264	34,305	146,681
1907-8	31,917	54,149	7,889	9,062	1,854	38,640	143,511
1908-9	26,301	47,903	6,227	8,069	2,026	35,159	125,685
1909-10	35,725	62,390	7,708	8,131	1,741	21,375	137,070

2. **Total Yield.**—For the season 1909-10, Victoria's production represented about 45 per cent. of the total for the Commonwealth, New South Wales and Tasmania coming

next in order. The total Commonwealth production for the season 1906-7, viz., 507,153 tons, was the highest ever attained, the yield which most nearly approached it being 449,383 tons in 1903-4. Details as to production in the several States during the period from 1890 onwards are as follows :—

COMMONWEALTH PRODUCTION OF POTATOES, 1890-1 to 1909-10.

Season.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tasmania.	C'wealth.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1890-1	52,791	204,155	13,112	23,963	1,900	73,158	369,079
1895-6	56,179	117,238	19,027	18,412	2,290	81,423	294,569
1900-1	63,253	123,126	20,014	14,566	4,836	93,862	319,657
1901-2	39,146	125,474	22,402	15,059	5,739	114,704	322,524
1902-3	30,732	168,759	3,257	28,312	6,488	163,518	401,066
1903-4	56,743	167,736	17,649	31,415	4,542	171,298	449,383
1904-5	48,754	92,872	19,231	19,521	5,614	110,547	296,539
1905-6	49,889	115,352	11,308	20,328	6,297	64,606	267,780
1906-7	114,856	166,839	15,830	22,277	5,028	182,323	507,153
1907-8	55,882	135,110	13,177	20,263	5,671	145,483	375,586
1908-9	71,794	152,840	11,550	21,553	6,695	121,605	386,037
1909-10	100,143	174,970	13,544	18,569	5,948	73,862	387,036

3. **Average Yield per Acre.**—The suitability of the soil, climate, and general conditions of Tasmania for potato growing is evidenced by the high yields per acre which are almost invariably obtained in the island State. The lowest average yield is that obtained in Queensland. Particulars for each State for the nine seasons 1901-2 to 1909-10 are given hereunder:—

AVERAGE YIELD OF POTATOES, COMMONWEALTH AND STATES,

1901-2 TO 1909-10.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1901-2	1.50	3.13	2.25	2.41	3.14	4.51	2.94
1902-3	1.58	3.40	1.12	3.65	3.11	4.72	3.44
1903-4	2.72	3.43	2.62	3.65	2.49	5.87	3.87
1904-5	2.04	1.98	1.97	2.35	2.95	4.26	2.54
1905-6	1.89	2.58	1.58	2.13	2.94	2.26	2.26
1906-7	3.12	3.01	1.97	2.25	2.22	5.31	3.46
1907-8	1.75	2.50	1.67	2.24	3.06	3.77	2.62
1908-9	2.73	3.19	1.85	2.67	3.30	3.46	3.07
1909-10	2.80	2.80	1.76	2.28	3.42	3.46	2.82

4. **Value of Potato Crop.**—The estimated value of the potato crop of each State for the season 1909-10 is furnished in the following table together with the value per acre :—

VALUE OF POTATO CROP, 1909-10.

State.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
Total value	£461,130	£673,635	£94,808	£102,129	£59,480	£246,206	£1,637,388
Value per acre	£12/18/2	£10/15/11	£12/6/-	£12/11/2	£34/3/3	£11/10/4	£11/18/11

5. **Relation to Population.**—The average production of potatoes per annum per head of the population of the Commonwealth for the past nine seasons has been approximately 1⅞ cwt. In Tasmania, where this crop is of far greater importance in relation to population than is the case in any other State, the production per head in 1906-7 was more than a ton, and in 1909-10 about 8 cwt. Details for the past nine seasons are as follows :—

POTATO PRODUCTION PER 1000 OF POPULATION.

Season.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tas.	C'wealth.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1901-2	29	104	45	42	30	665	85
1902-3	22	139	6	78	32	940	104
1903-4	44	139	34	86	25	965	115
1904-5	34	77	37	53	24	618	75
1905-6	34	95	22	54	25	360	67
1906-7	76	136	30	59	19	1,019	124
1907-8	36	109	24	53	22	811	90
1908-9	45	121	21	54	25	669	91
1909-10	62	136	24	45	22	401	90

6. **Commonwealth Imports and Exports.**—Under normal conditions there is usually a fairly large export trade in potatoes carried on by the Commonwealth, principally with New Zealand, the Pacific Islands, and the Philippine Islands. Thus, during 1907, out of a total export of 17,842 tons, 13,346 tons went to New Zealand, 2102 tons to the Pacific Islands, and 2112 tons to the Philippine Islands. On the other hand, when in 1902 and 1903 the drought of that period had brought about a shortage in the Australian supplies, importations from New Zealand took place to the extent of 11,471 tons in the former and 2279 tons in the latter year. The quantities and values of the Commonwealth oversea imports and exports of potatoes for the nine years 1901 to 1909 are contained in the following table :—

COMMONWEALTH IMPORTS AND EXPORTS OF POTATOES, 1901 to 1909.

Year.	Imports.		Exports.		Net Exports.*	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Tons.	£	Tons.	£	Tons.	£
1901 ...	17,655	86,067	6,028	45,485	— 11,627	— 40,582
1902 ...	11,608	53,919	3,383	20,192	— 8,225	— 33,727
1903 ...	2,367	7,752	3,407	12,336	1,040	4,584
1904 ...	2,602	8,186	5,464	14,462	2,862	6,276
1905 ...	428	3,181	4,058	29,730	3,630	26,549
1906 ...	295	2,205	12,908	86,248	12,613	84,043
1907 ...	150	981	17,842	53,452	17,692	52,471
1908 ...	129	1,112	3,375	18,560	3,246	17,448
1909 ...	138	1,202	2,604	16,370	2,466	15,168

* — signifies net imports.

7. **Interstate Trade in Potatoes.**—A large trade in potatoes is carried on between the States of the Commonwealth, the principal exporting State being Tasmania, and the chief importers New South Wales, Queensland and Western Australia. Particulars for each State for the year 1909 are given hereunder :—

INTERSTATE TRADE IN POTATOES, 1909.

State.	Imports from Other States of the Commonwealth.		Exports to Other States of the Commonwealth.		Net Interstate Exports.*	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Tons.	£	Tons.	£	Tons.	£
New South Wales	45,939	235,417	7,238	37,852	— 38,701	— 197,565
Victoria ...	2,534	10,541	25,258	121,845	22,724	111,304
Queensland ...	22,102	100,728	114	672	— 21,988	— 100,056
South Australia ...	8,885	44,080	2,033	10,759	— 6,852	— 33,321
Western Australia	10,915	48,290	58	410	— 10,857	— 47,880
Tasmania ...	230	902	55,904	268,420	55,674	267,518

* — signifies net imports.

8. **Comparison with Other Countries.**—The following table will furnish means for comparing the potato crop of Australia for 1908 with those of some of the leading potato-producing countries of the world for the same year:—

POTATO CROPS OF VARIOUS COUNTRIES, 1908.

Country.	Yield.	Country.	Yield.
	Tons.		Tons.
Germany	45,598,000	Sweden	1,890,000
Russian Empire ...	29,402,000	Canada	1,845,000
Austria-Hungary (1907)	19,885,000	Denmark ...	716,000
France (1907)	13,717,000	Japan (1907) ...	563,000
United Kingdom ...	7,117,000	Norway (1907) ...	411,000
United States ...	6,763,000	**Australia** ...	**386,000**
Belgium (1907) ...	2,362,000	New Zealand ...	195,000
Netherlands	2,343,000	Luxemburg ...	195,000

§ 10. Other Root and Tuber Crops.

1. **Nature and Extent.**—Root crops, other than potatoes, are not extensively grown in Australia, the total area devoted to them for the season 1909-10 being only 20,301 acres. The principal of these crops are onions, mangolds, turnips, and "sweet potatoes" *(Batatas edulis)*. Of these, onions are most largely grown in Victoria, mangolds in Tasmania and Victoria, turnips in Tasmania, and sweet potatoes in Queensland. The total area under onions in the Commonwealth during the season 1909-10 was 7271 acres, giving a total yield of 36,283 tons, and averaging 4.99 tons per acre. The area devoted in 1909-10 to root crops other than potatoes and onions, viz., 13,030 acres, yielded 105,423 tons, and gave an average of 8.09 tons per acre. The areas and yields here given are exclusive of the production of "market gardens," a reference to which will be made later.

2. **Commonwealth Imports and Exports.**—The only root crop, other than potatoes, in which any considerable oversea trade is carried on by the Commonwealth is that of onions. During the year 1909 oversea imports of onions amounted to 2670 tons, the principal countries from which they were obtained being New Zealand and Japan. For the same year the exports of onions totalled 2647 tons, the principal countries to which they were exported being New Zealand, Canada, the Philippine Islands, and the United States of America.

3. **Interstate Trade.**—A fairly extensive trade in onions is carried on between the several States of the Commonwealth. Victoria, the largest producer of onions, is also the largest exporter, while New South Wales, Queensland, and Western Australia are the principal importers. During the year 1909 the interstate onion trade was as follows:—

INTERSTATE TRADE IN ONIONS, 1909.

State.	Imports from Other States of the Commonwealth.		Exports to Other States of the Commonwealth.		Net Interstate Exports.*	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Tons.	£	Tons.	£	Tons.	£
New South Wales ...	7,766	50,071	248	1,785	— 7,518	— 48,286
Victoria	33	269	14,709	93,019	14,676	— 92,750
Queensland ...	4,234	26,195	...	...	— 4,234	— 26,195
South Australia ...	486	3,371	425	3,000	— 61	— 371
Western Australia ...	2,306	14,385	...	...	— 2,306	— 14,385
Tasmania	561	3,535	4	22	— 557	— 3,513

* — signifies net imports.

§ 11. Hay.

1. **Nature and Extent.**—As already stated, the most important crop of the Commonwealth is that of wheat grown for grain. Next to this in importance is the hay crop, which for the season 1909-10 represented about 20.3 per cent. of the area under crop in the Commonwealth. In most European countries the hay crop consists almost entirely of meadow and other grasses, whilst in Australia a very large proportion of the area under hay comprises cereal crops, mainly wheat and oats. A considerable quantity of lucerne hay is also made, particularly in New South Wales and Queensland. The area under hay of all kinds in the several States from 1860 onwards is given hereunder:—

AREA UNDER HAY, 1860-1 to 1909-10.

Season.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tas.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1860-1	46,584	90,921	276	55,818	6,626	31,837	232,062
1865-6	61,909	97,902	1,449	101,996	8,824	30,244	302,324
1870-1	65,404	163,181	3,671	140,316	17,173	33,612	423,357
1875-6	77,125	155,274	8,531	161,429	17,319	34,758	454,436
1880-1	131,153	249,656	12,022	272,567	19,563	31,615	716,576
1885-6	219,886	421,036	28,881	312,672	19,677	41,693	1,043,845
1890-1	175,242	413,052	31,106	345,150	23,183	45,381	1,033,114
1895-6	319,296	464,482	28,609	362,972	63,804	54,748	1,293,911
1900-1	466,236	502,105	42,497	341,330	104,254	61,541	1,517,963
1901-2	442,163	659,239	63,055	369,796	92,654	61,495	1,688,402
1902-3	491,918	580,884	20,068	325,789	105,791	66,038	1,590,488
1903-4	496,017	733,353	78,393	370,152	109,002	66,947	1,853,864
1904-5	435,704	452,459	48,740	269,626	105,247	55,545	1,367,321
1905-6	438,036	591,771	37,425	317,924	124,906	64,350	1,574,412
1906-7	458,172	621,139	64,498	298,396	149,830	64,965	1,657,000
1907-8	542,761	682,194	54,037	328,672	131,056	73,859	1,812,579
1908-9	715,896	956,371	65,004	424,924	201,874	88,613	2,452,682
1909-10	630,491	864,359	72,298	424,448	158,629	77,804	2,228,029

It will be seen from this table that in all the States marked fluctuations occur in the area devoted to the hay crop from year to year. These fluctuations are due to various causes, the principal being the variations in the relative prices of grain and hay, and the favourableness or otherwise of the season for a grain crop. Thus crops originally

sown for grain are frequently cut for hay owing to the improved price of that commodity, or owing to the fact that the outlook for the due development of the grain is not a satisfactory one. On the other hand, improved grain prices or the prospect of a heavy yield will frequently cause crops originally intended for hay to be left for grain. The area under hay in the Commonwealth for the season 1909-10 was, with the exception of that for the previous season, the highest on record.

2. **Kinds of Hay.**—Particulars concerning the kind of crop cut for hay are furnished for a series of years in the returns prepared by four of the States. Totals only were shewn in the cases of South Australia and Tasmania until the season 1907-8, when a specification of details was obtained in South Australia also. Details for the past five seasons are given in the following table :—

KINDS OF HAY GROWN, 1905-6 to 1909-10.

Kind of Hay Crop.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.
NEW SOUTH WALES—	Acres.	Acres.	Acres.	Acres.	Acres.
Wheaten	313,582	316,945	365,925	490,828	380,784
Oaten	88,495	94,420	132,325	169,441	178,968
Barley	2,397	843	937	1,566	1,917
Lucerne	33,562	45,964	43,574	54,061	68,822
Total	438,036	458,172	542,761	715,896	630,491
VICTORIA—					
Wheaten	203,726	231,408	210,927	278,005	186,400
Oaten	377,885	377,887	460,192	662,141	660,525
Other	10,160	11,844	11,075	16,225	17,434
Total	591,771	621,139	682,194	956,371	864,359
QUEENSLAND—					
Wheaten	2,856	8,664	2,084	4,075	9,031
Oaten	4,446	9,260	5,629	9,314	16,752
Lucerne	28,564	44,178	44,101	48,247	42,935
Other	1,559	2,396	2,223	3,368	3,580
Total	37,425	64,498	54,037	65,004	72,298
SOUTH AUSTRALIA—					
Wheaten	...	...	271,067	348,307	318,197
Oaten	...	...	48,151	68,659	96,496
Lucerne	...	...	3,767	3,162	2,537
Other	...	...	5,687	4,796	7,218
Total	317,924*	298,396*	328,672	424,924	424,448
WESTERN AUSTRALIA—					
Wheaten	99,629	116,164	95,123	151,745	101,590
Oaten	23,910	32,521	33,854	48,309	55,006
Lucerne	1,367	1,145	2,079	124	254
Other				1,696	1,779
Total	124,906	149,830	131,056	201,874	158,629

* Details not available.

It will be seen that wheat is the principal hay crop in New South Wales, South Australia, and Western Australia, oats in Victoria, and lucerne in Queensland. Details for Tasmania are not available.

3. **Total Yield.**—The Commonwealth hay crop for the season 1909-10 amounted to 3,153,196 tons, or 15,822 tons more than were produced in 1908-9. This represents the largest hay crop ever harvested in the Commonwealth, the highest previous record being that of 3,137,374 tons for the season 1908-9. For many years past the State of Victoria has been the largest hay producer in the Commonwealth, and in the season 1909-10 accounted for more than 37 per cent. of the total production. The total yields of the several States from 1860 onwards are given hereunder:—

COMMONWEALTH HAY CROP, 1860-1 to 1909-10.

Season.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Commonwealth.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1860-1	50,927	144,211	414	71,241	8,099	62,318	337,210
1865-6	54,230	96,101	2,173	88,731	7,901	34,751	283,887
1870-1	69,602	183,708	5,506	197,149	20,833	40,763	517,561
1875-6	88,968	206,613	12,796	194,794	17,319	49,217	569,707
1880-1	174,194	300,581	23,441	261,371	19,563	35,883	815,033
1885-6	191,371	442,118	30,670	307,855	19,677	51,872	1,043,563
1890-1	213,034	567,779	50,116	310,125	25,014	52,021	1,218,089
1895-6	229,671	390,861	50,881	225,462	53,758	62,345	1,012,978
1900-1	526,260	677,757	78,758	353,662	103,813	94,198	1,834,448
1901-2	472,621	884,369	122,039	346,467	89,729	109,383	2,024,608
1902-3	243,379	601,272	23,181	308,825	94,007	89,210	1,359,874
1903-4	816,810	1,233,063	136,117	479,723	121,934	115,513	2,903,160
1904-5	366,293	514,316	80,662	294,252	113,794	73,457	1,442,774
1905-6	459,182	864,177	56,829	435,546	139,380	90,077	2,045,191
1906-7	621,846	881,276	94,343	398,866	158,112	104,797	2,259,240
1907-8	376,800	682,370	77,601	376,170	137,511	98,406	1,748,858
1908-9	730,014	1,415,746	92,947	591,141	170,008	137,518	3,137,374
1909-10	981,201	1,186,738	96,854	574,475	195,182	118,746	3,153,196

4. **Value of Hay Crop.**—The following table furnishes particulars concerning the total value and the value per acre of the hay crop of the several States of the Commonwealth for the season 1909-10:—

VALUE OF HAY CROP, 1909-10.

Particulars.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Commonwealth.
							£
Total value...	£3,850,873	£2,610,824	£423,058	£1,321,292	£878,748	£445,297	9,530,092
Value per acre	£6/2/2	£3/0/5	£5/17/0	£3/2/3	£5/10/10	£5/14/6	£4/5/7

5. **Average Yield per Acre.**—The States of the Commonwealth in which the highest average yields per acre have been obtained are those of Queensland and Tasmania, these being also the States in which the smallest areas are devoted to this crop. For the past nine seasons the lowest yield for the Commonwealth as a whole was that of 17 cwt. per acre in 1902-3, and the highest that of 31 cwt. in 1903-4. Particulars for the several States for the seasons 1901-2 to 1909-10 are given hereunder:—

AVERAGE YIELD OF HAY PER ACRE, 1901-2 to 1909-10.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1901-2	1.07	1.34	1.94	0.94	0.97	1.78	1.20
1902-3	0.49	1.04	1.16	0.95	0.89	1.35	0.86
1903-4	1.65	1.68	1.74	1.30	1.12	1.73	1.57
1904-5	0.84	1.14	1.65	1.09	1.08	1.32	1.06
1905-6	1.05	1.46	1.52	1.37	1.12	1.40	1.30
1906-7	1.36	1.42	1.46	1.34	1.06	1.61	1.36
1907-8	0.69	1.00	1.44	1.14	1.04	1.33	0.96
1908-9	1.02	1.48	1.43	1.39	0.84	1.55	1.28
1909-10	1.56	1.37	1.34	1.35	1.23	1.53	1.42

6. **Relation to Population.**—During the past nine seasons the Commonwealth hay production per head of population has varied between 7 cwt. in 1902-3 and 15 cwt. in 1903-4 and 1908-9; averaging about 11 cwt. per head for the period. The State in which the hay production per head of population is highest is South Australia. Details for the past nine seasons are given hereunder:—

HAY PRODUCTION PER 1000 OF POPULATION.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1901-2	347	735	243	955	476	635	534
1902-3	175	497	45	847	457	513	353
1903-4	577	1,018	266	1,311	551	651	744
1904-5	254	426	155	796	481	411	365
1905-6	311	713	108	1,162	557	503	509
1906-7	412	720	177	1,042	608	586	552
1907-8	237	551	144	975	524	549	419
1908-9	461	1,125	169	1,485	638	757	741
1909-10	611	924	171	1,399	720	645	730

7. **Oversea Imports and Exports.**—Under normal conditions hay, whether whole or in the form of chaff, is somewhat bulky for oversea trade, and consequently does not in such circumstances figure largely amongst the imports and exports of the Commonwealth. In 1901 and 1902, however, the exceptional demand which was created by the South African war brought about a fairly large export of hay and chaff to Natal and the Cape of Good Hope. These colonies also took and are still taking a considerable quantity of Australian compressed fodder. During the year 1904, when the war between Japan and Russia was being carried on, the exports of compressed fodder to Hong Kong were valued at £42,759 and those to Japan at £23,608. The total value of the hay and chaff exported during 1901 was £406,455, as compared with £9510 only in 1909, while the exports of fodder, which amounted in value to £142,472 in 1904, had shrunk to £25,430 in 1909.

During 1909 the principal consignees of the hay and chaff exported from the Commonwealth were India, the Straits Settlements, Ceylon, the Philippine Islands, and Java, while the principal countries to which compressed fodder was exported were the Philippine Islands, Cape of Good Hope, and Ceylon.

Imports of hay and chaff into the Commonwealth are usually unimportant, and for the year 1909 totalled 71 tons, valued at £302, obtained principally from New Zealand.

8. **Interstate Trade in Hay and Chaff.**—A considerable trade in hay and chaff is carried on between the several States of the Commonwealth, the exporting States during the year 1909 being Victoria and South Australia, and the importing States New South Wales, Queensland, Western Australia, and Tasmania. Particulars of interstate imports and exports for 1909 are given in the following table:—

INTERSTATE TRADE IN HAY AND CHAFF, 1909.

State.	Imports from other States of the Commonwealth.		Exports to other States of the Commonwealth.		Net Interstate Exports.*	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Tons.	£	Tons.	£	Tons.	£
New South Wales	85,672	317,464	4,830	20,450	—80,842	—297,014
Victoria ...	431	1,356	72,829	253,786	72,398	252,430
Queensland ...	21,245	68,546	55	228	—21,190	— 68,318
South Australia ...	35	133	30,186	114,418	30,151	114,285
Western Australia	179	816	18	69	— 161	— 747
Tasmania ...	1,827	5,925	1,471	5,289	— 356	— 636

* — signifies net imports.

9. **Hay Production in Other Countries.**—As already noted, the hay crops of most European countries consist of grasses of various kinds, amongst which clover, lucerne, sainfoin and rye grass occupy a prominent place. The statistics of hay production in these countries are not prepared on a uniform basis, and consequently any attempt to furnish an extensive comparison of the production of hay in the various countries would probably be misleading. It may be noted, however, that in the United Kingdom the production of hay from clover, sainfoin, etc., was for the year 1908 represented by 5,131,663 tons from 3,081,380 acres, while from permanent grasses a yield of 9,505,663 tons of hay was obtained from 6,399,567 acres, giving a total of 14,637,326 tons from 9,480,947 acres, or about 31 cwt. per acre.

§ 12. Green Forage.

1. **Nature and Extent.**—In all the States of the Commonwealth a considerable area is devoted to the production of green forage, mainly in connection with the dairying industry. The total area so cropped during the season 1909-10 was 306,082 acres, which was 107,429 acres less than the corresponding area for 1908-9. Of this total the New South Wales area represented about 39 per cent., while that in Queensland amounted to about 33 per cent. of the total. The principal crops cut for green forage are maize, sorghum, oats, barley, rye, rape, and lucerne, while small quantities of sugar-cane also are so used. Particulars concerning the area under green forage in the several States from 1890 onwards are furnished in the following table:—

AREA UNDER GREEN FORAGE, 1890-1 to 1909-10.

Season.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1890-1 ...	37,473	10,091	9,546	7,349	161	1,497	66,117
1895-6 ...	66,833	25,939	19,552	7,309	430	1,883	121,946
1900-1 ...	78,144	18,975	41,445	13,136	1,024	3,749	156,473
1901-2 ...	113,060	32,795	39,793	13,695	1,563	4,262	205,168
1902-3 ...	109,287	31,145	51,279	14,937	636	3,509	210,859
1903-4 ...	77,130	33,165	26,576	19,241	672	3,212	159,996
1904-5 ...	87,718	29,902	35,861	20,362	1,643	4,266	179,752
1905-6 ...	95,058	34,041	66,183	23,842	1,873	4,882	225,879
1906-7 ...	122,914	36,502	50,513	17,985	3,265	5,326	236,505
1907-8 ...	260,810	59,897	91,444	15,434	4,773	6,367	438,725
1908-9 ...	235,539	63,066	87,675	16,086	4,902	6,243	413,511
1909-10 ...	118,960	56,586	100,493	17,226	6,068	6,749	306,082

2. **Value of Green Forage Crops.**—The value of these crops is variously estimated in the several States, and the Commonwealth total for the season 1909-10 may be taken approximately as £1,169,000, or about £3 16s. 5d. per acre.

3. **Relation to Population.**—Particulars concerning the area under green forage per 1000 of the population of the Commonwealth and the several States for the past nine seasons are given hereunder :—

AREA UNDER GREEN FORAGE PER 1000 OF POPULATION.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901-2	83	27	79	38	8	24	54
1902-3	79	26	101	41	3	20	54
1903-4	54	27	52	53	3	18	41
1904-5	61	25	69	55	7	24	45
1905-6	64	28	126	64	7	27	56
1906-7	81	29	95	47	13	30	57
1907-8	166	48	170	40	18	35	105
1908-9	148	50	160	40	18	34	97
1909-10	73	43	175	41	22	36	69

§ 13. Sugar-Cane.

1. **Area.**—Sugar-cane is grown for sugar-making purposes in only two of the States of the Commonwealth, viz., Queensland and New South Wales, and much more extensively in the former than the latter. Thus of the total area of 142,261 acres under sugar-cane in the Commonwealth for the season 1909-10 there were 128,178 acres, or about 90 per cent., in Queensland. Sugar-cane growing appears to have been started in the Commonwealth in or about 1862, as the earliest statistical record of sugar-cane as a crop is that which credits Queensland with an area of twenty acres for the season 1862-3. In the following season the New South Wales records shew that an area of two acres was devoted to the crop in the mother State. The area under cane in New South Wales reached its maximum in 1895-6 with a total of 32,927 acres. It then fell continuously to 1902-3, when it was lower than for any previous season since 1889-90. From 1902-3 to 1906-7 it remained practically stationary, but since then it has fallen every year and in 1909-10 had dropped to 14,083 acres, the lowest area under sugar-cane since 1882-3. In Queensland, on the other hand, although fluctuations in area are in evidence throughout, the general trend has been one of satisfactory increase, the area under cane for the season 1905-6 being the highest on record, and that for 1906-7 only a little short of it. In 1907-8 the area in Queensland declined to 126,810 acres, and in 1908-9 still further to 123,902 acres, but there was a marked increase in 1909-10, when it rose to 128,178 acres. The area under sugar-cane in the Commonwealth from 1865 onwards is given in the following table :—

AREA UNDER SUGAR-CANE, 1865-6 to 1909-10.

Season.	N.S.W.	Queensland.	C'wealth.	Season.	N.S.W.	Queensland.	C'wealth.
	Acres.	Acres.	Acres.		Acres.	Acres.	Acres.
1865-6	141	450	591	1902-3	20,160	85,338	105,498
1870-1	4,082	6,342	10,424	1903-4	20,182	111,516	131,698
1875-6	6,454	13,459	19,913	1904-5	21,525	120,317	141,842
1880-1	10,971	20,224	31,195	1905-6	21,805	134,107	155,912
1885-6	16,419	59,186	75,605	1906-7	20,580	133,284	153,864
1890-1	20,446	50,922	71,368	1907-8	17,953	126,810	144,763
1895-6	32,927	77,247	110,174	1908-9	16,981	123,902	140,883
1900-1	22,114	108,535	130,649	1909-10	14,083	128,178	142,261
1901-2	20,809	112,031	132,840				

2. **Productive and Unproductive Cane.**—The areas given in the preceding table represent the total area on which sugar-cane was grown during the seasons specified for purposes other than green forage. The whole area, however, was not in any case cut for crushing during that seas on, there being always a considerable amount of "stand over" cane, as well as a small quantity required for plants. In the season 1909-10 the New South Wales total comprised 6480 acres of productive and 7603 acres of unproductive cane, while in the case of Queensland the productive cane amounted to 80,095 acres and the unproductive to 48,083 acres, the latter including 2274 acres for plants.

3. **Yield of Cane.**—Queensland statistics of the production of sugar-cane are not available for dates prior to the season 1897-8. In that season the total for the Commonwealth was 1,073,883 tons, as against 1,294,575 tons for 1909-10. The average yield per acre of productive cane is much higher in New South Wales than in Queensland, and during the six seasons 1901-2 to 1906-7 in the case of the former State remained practically constant at about 21 tons per acre. In 1907-8 the yield in New South Wales was so excellent that, notwithstanding the comparative smallness of the area cultivated, the aggregate amount of cane produced was the largest in that State since 1898-9. In 1909-10, on the other hand, owing mainly to the decline in area of productive cane, the total yield amounted to only 131,081 tons, the lowest for the State since 1888. The average yield per acre for New South Wales for 1909-10 was 20¼ tons. In Queensland the average yield per acre for 1909-10 was much lower than for the three preceding seasons. Particulars relative to the total and average yields of the Commonwealth sugar crops for the seasons 1901-2 to 1909-10 are as follows:—

YIELD OF SUGAR-CANE, 1901-2 to 1909-10.

Season.	Total Yield of Cane.			Average Yield per Acre of Productive Cane.		
	N.S.W.	Queensland.	C'wealth.	N.S.W.	Queensland.	C'wealth.
	Tons.	Tons.	Tons	Tons.	Tons.	Tons.
1901-2 ...	187,711	1,180,091	1,367,802	21.36	15.10	15.73
1902-3 ...	183,105	641,927	825,032	20.90	10.86	12.16
1903-4 ...	227,511	823,875	1,051,386	21.94	13.65	14.86
1904-5 ...	199,640	1,326,989	1,526,629	20.43	16.04	16.50
1905-6 ...	201,998	1,415,745	1,617,743	19.59	14.73	15.20
1906-7 ...	221,560	1,728,780	1,950,340	21.35	17.61	17.96
1907-8 ...	277,390	1,665,028	1,942,418	27.97	17.64	18.62
1908-9 ...	144,760	1,433,315	1,578,075	20.83	15.54	15.91
1909-10 ...	131,081	1,163,494	1,294,575	20.23	14.53	14.95

A preliminary estimate for Queensland for the season 1910-11, places the total yield of cane in that State at 1,818,781 tons of cane, and the estimated production of sugar therefrom at 207,340 tons, or about 11½ per cent. of the weight of cane crushed.

4. **Relation to Population.**—The sugar-cane production of the Commonwealth during the past five seasons has averaged about 8 cwt. per head of population. In Queensland, the principal sugar-producing State, the production of cane per head has ranged between 2⅞ tons in 1905-6 and 3¼ tons in 1906-7. Details for the period 1905-6 to 1909-10 are as follows:—

SUGAR-CANE PRODUCTION PER 1000 OF POPULATION.

State.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.
	Tons.	Tons.	Tons.	Tons.	Tons.
New South Wales	137	147	179	92	81
Queensland	2,693	3,244	3,090	2,609	2,032
Commonwealth	403	477	467	373	297

5. **Quality of Cane.**—The quantity of cane required to produce a ton of sugar varies considerably not only with the district in which the cane is grown but also with the season. In Queensland, for instance, during the seasons 1902-3 to 1906-7 the sugar content of the cane crushed continuously diminished, so that whilst in 1902-3 the quantity of cane used in producing a ton of sugar was 8.38 tons, in the season 1906-7 the quantity required was 9.38 tons, the production in the former case being approximately 12 per cent. and in the latter 10⅔ per cent. of the weight of cane crushed. For the season 1907-8, the cane was of much better quality, and the quantity required to produce a ton of sugar was only 8.84 tons, the sugar content representing in this case somewhat more than 11¼ per cent. of the weight of cane crushed. In 1908-9, owing in large measure to the effect of frosts, the quantity of cane required to produce one ton of sugar was increased to 9.49 tons, the sugar thus representing only about 10½ per cent. of the weight of cane crushed, while in 1909-10 only 8.65 tons of cane were required to each ton of sugar, the sugar representing about 11½ per cent. of the weight of cane crushed. It should be noted also that in 1901-2 no less than 9.76 tons of cane were needed to produce a ton of sugar. It may be remarked in this connection that the systematic study of the beet in Germany shewed that by suitable culture its sugar content might be greatly increased, and this is by no means impossible in the case of sugar-cane.

6. **Sugar Bounties.**—The provision of bounties or similar aids to the sugar-growers of the Commonwealth early occupied the attention of the Commonwealth Parliament, the object in view being that of assisting the industry whilst at the same time diminishing the employment of coloured labour in connection therewith. The earliest legislative provision made with this object in view was that contained in the Excise Tariff 1902, under which an excise duty of three shillings per cwt. of manufactured sugar was charged, and a rebate of four shillings per ton allowed on all sugar-cane delivered for manufacture in the production of which white labour only had been employed after 28th February, 1902. This rebate was calculated on the basis of cane giving 10 per cent. of sugar, and was increased or reduced proportionately according to any variation from this standard, that is to say, the rebate amounted to two shillings per cwt. of the sugar content of the cane treated. In actual practice it was found that this system of rebates was producing effects that had not been anticipated at the time the legislation was passed, and that the greater part of the cost of substituting white for black labour in the sugar-growing industry was thereby being imposed upon the States engaged in the industry, viz., Queensland and New South Wales, instead of being a charge upon the whole Commonwealth. To remedy this state of affairs the Sugar Rebate Abolition Act of 1903 was passed on 30th July, 1903, and the Sugar Bounty Act 1903 received assent on the same day. The rate of bounty provided by this latter Act was, as in the case of the rebate mentioned above, four shillings per ton of cane grown by white labour giving 10 per cent. of sugar, the bounty to be increased or reduced proportionately according to any variation from this standard. This Act remained in force until 31st December, 1906, when it was superseded by the provisions of the Sugar Bounty Act 1905, which extended the principle of bounties to the end of the year 1912, but stipulated that during the years 1911 and 1912 the rates payable on cane delivered should be respectively two-thirds and one-third of the rates prevailing during the earlier years of the period. During the 1910 Session of the Commonwealth Parliament an amending Act (the Sugar Bounty Act 1910) was passed repealing the provision for successive decrements in the amount of bounty payable, and thus leaving the bounty at full rate applicable for an indefinite time. The rate of bonus allowed under this Act is six shillings per ton of cane of 10 per cent. quality grown by white labour, provided that the rates of wages and conditions of employment of such labour are fair and reasonable, in accordance with the provisions of the Act. Under the Excise Tariff 1905, assented to on 21st December, 1905, the excise duty on sugar was, from 1st January, 1907, increased to four shillings per cwt. of manufactured sugar in place of three shillings formerly imposed. This rate of duty was, under the original Act, to continue in force until 31st December, 1910, reducing to 2s. 8d. per cwt. for 1911, 1s. 4d. per cwt. for 1912, and being abolished after 31st December, 1912. The Excise (Sugar

Act 1910, however, repealed these provisions for reduction and abolition, leaving the duty in force at the full rate for an indefinite time.

7. **Cost of Bounties.**—The amounts paid by the Commonwealth Government in sugar bounties and the expenses in connection therewith during the seven years 1902-3 to 1908-9, as well as the manner in which this expenditure was allocated to the several States, is shewn in the following table:—

TOTAL EXPENDITURE ON SUGAR BOUNTIES, 1902-3 to 1908-9.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	£	£	£	£	£	£	£
1902-3 ...	21,999	18,923	8,003	5,743	3,378	2,781	60,827
1903-4 ...	35,273	29,873	12,740	9,115	5,608	4,436	97,045
1904-5 ...	46,880	38,935	16,781	11,990	7,794	5,798	128,178
1905-6 ...	56,950	46,520	20,159	14,439	9,727	6,914	154,709
1906-7 ...	124,492	100,456	43,635	31,299	21,344	14,690	335,916
1907-8 ...	218,543	173,855	75,463	54,697	36,434	25,630	584,622
1908-9 ...	180,079	143,820	62,490	46,068	30,222	21,027	483,706
1909-10 ...	151,181	121,505	53,386	38,786	25,501	17,420	407,779

The above figures comprise for all the years except 1902-3 the expenses connected with the payment of bounties, as well as the amount actually paid in bounties to the growers. Separately stated the bounties and expenses for the period are as follows:—

SUGAR BOUNTIES AND EXPENSES, 1902-3 to 1909-10.

Year ...	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.
	£	£	£	£	£	£	£	£
Bounties ...	60,827	90,806	121,408	148,106	328,210	577,148	477,090	402,131
Expenses ...	*	6,239	6,770	6,603	7,706	7,474	6,616	5,648
Total ...	*	97,045	128,178	154,709	335,916	584,622	483,706	407,779

* Not available.

8. **Collection of Sugar Excise.**—The table hereunder contains particulars concerning the net amount of excise duty on sugar collected in respect of the several States for the nine years 1901-2 to 1909-10. In this table refunds and drawbacks have been deducted and the requisite adjustment has been made between the States:—

SUGAR EXCISE, 1901-2 to 1909-10.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	£	£	£	£	£	£	£
1901-2 ...	119,577	40,189	10,658	781	8,184	10,156	189,545
1902-3 ...	166,952	10,715	61,523	1,332	7,294	13,701	261,517
1903-4 ...	166,646	Dr. 2,307	73,634	1,413	18,464	14,267	272,117
1904-5 ...	183,335	163,247	70,576	34,626	30,980	20,863	503,627
1905-6 ...	183,457	149,120	98,015	45,921	35,339	24,227	536,079
1906-7 ...	211,625	138,982	83,826	50,564	37,109	24,484	546,590
1907-8 ...	266,876	226,638	103,272	63,788	46,238	35,116	741,928
1908-9 ...	250,329	229,409	116,215	69,267	49,434	36,122	750,776
1909-10 ...	137,672	229,981	126,626	9,373	32,526	12,538	548,716

9. **Production by White and Black Labour.**—The following table contains particulars concerning the production of sugar in New South Wales and Queensland during the past

eight seasons, and furnishes an indication of the decline in the employment of black labour in the sugar industry during that period:—

SUGAR PRODUCTION, 1902-3 to 1909-10.

Season.	New South Wales.			Queensland.			Commonwealth.		
	Sugar Produced by			Sugar Produced by			Sugar Produced by		
	White Labour.	Black Labour.	Total.	White Labour.	Black Labour.	Total.	White Labour.	Black Labour.	Total.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1902-3 ...	19,434	1,526	20,960	12,254	65,581	77,835	31,688	67,107	98,795
1903-4 ...	19,236	2,561	21,797	24,406	65,456	89,862	43,642	68,017	111,659
1904-5 ...	17,812	1,838	19,650	39,404	105,616	145,020	57,216	107,454	164,670
1905-6 ...	18,019	1,964	19,983	50,897	101,362	152,259	68,916	103,326	172,242
1906-7 ...	21,805	1,613	23,418	127,539	54,619	182,158	149,344	56,232	205,576
1907-8 ...	28,247	934	29,181	162,480	22,583	185,063	190,727	23,517	214,244
1908-9 ...	14,351	964	15,315	132,078	18,322	150,400	146,429	19,286	165,715
1909-10 ...	13,839	815	14,654	118,364	14,452	132,816	132,203	15,267	147,470

During the period under review the proportion of sugar produced by black labour declined from 68 per cent. of the total for 1902-3 to less than 10½ per cent. of the total for 1909-10.

10. **Imports and Exports of Sugar.**—Notwithstanding the increase in the production of sugar in evidence in the Commonwealth during recent years, Australia's oversea import trade in cane sugar remained fairly extensive until 1906, the principal countries engaged in supplying this commodity being Java, Mauritius, and Fiji. In 1907 the exports of sugar exceeded the imports for the first time, the value of the net exports being £166,121. In 1908 the imports exceeded the exports by 96,218 cwt. in quantity, and £37,080 in value, while in the following year the excess of imports over exports was 1,832,943 cwt., valued £1,004,308. The principal countries to which Australian sugar is exported are Natal, Cape Colony, New Zealand and New Caledonia, but the bulk of the sugar exported from the Commonwealth is not of Australian origin, but merely a re-export of sugar produced elsewhere. Thus of 161,024 cwt. exported during 1909, only 4099 cwt. were of Australian origin. The sugar so re-exported comes mainly from Fiji, Java, and Mauritius. Particulars concerning the imports and exports of cane sugar for the years 1901 to 1909 are as follows:—

IMPORTS AND EXPORTS OF CANE SUGAR, 1901 to 1909.

Year.	Oversea Imports.		Oversea Exports.		Net Imports.*	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	cwt.	£	cwt.	£	cwt.	£
1901 ...	1,970,883	1,239,550	94,764	68,876	1,876,119	1,170,674
1902 ...	1,862,063	1,120,554	66,736	48,751	1,795,327	1,071,803
1903 ...	1,830,595	1,054,338	47,295	33,242	1,783,300	1,021,096
1904 ...	760,702	415,120	58,882	42,699	701,820	372,421
1905 ...	498,670	276,157	223,161	155,514	275,509	120,643
1906 ...	839,519	439,916	185,072	140,466	654,447	299,450
1907 ...	123,351	77,259	365,213	243,380	— 241,862	— 166,121
1908 ...	391,048	245,495	294,830	208,415	96,218	37,080
1909 ...	1,993,967	1,122,863	161,024	118,555	1,832,943	1,004,308

* — signifies net exports.

11. **Interstate Trade in Sugar.**—The interstate trade in sugar is an extensive one, the exports from Queensland to the other States of the Commonwealth representing a

value of £1,124,537 for the year 1909. The manner in which this trade is distributed amongst the several States is furnished in the table given hereunder:—

INTERSTATE TRADE IN CANE SUGAR, 1909.

State.	Imports from other States of the Commonwealth.		Exports to other States of the Commonwealth.		Net Interstate Exports.*	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	cwt.	£	cwt.	£	cwt.	£
New South Wales	721,122	519,800	432,381	327,724	— 288,741	— 192,076
Victoria ...	1,335,269	686,967	97,441	79,835	— 1,237,828	— 607,132
Queensland ...	25,684	21,264	1,929,630	1,124,537	1,903,946	1,103,273
South Australia ...	14,269	11,680	86,174	66,266	71,905	54,586
Western Australia	228,736	188,795	67	51	— 228,669	— 188,744
Tasmania ...	220,658	169,925	45	18	— 220,613	— 169,907

* — signifies net imports.

§ 14. Vineyards.

1. **Nature and Extent.**—The introduction of the vine into Australia has been set down by different investigators as at various dates, of which 1815 and 1828 appear to have had some measure of support. It would seem, however, that the vine really came out with the First Fleet, which initiated the colonisation of Australia, in 1788, and that consequently the Australian vine is as old as Australian settlement. As already mentioned a report of Governor Hunter's gives the area under vines in 1797 as 8 acres. From New South Wales the vine spread to Victoria and South Australia, and these States have now far outstripped the mother State in the area which they have devoted to its cultivation. In Queensland and Western Australia also, vine-growing has been carried on for many years, but in neither State has the industry progressed with the rapidity attained in Victoria and South Australia. In Tasmania the climate is not favourable to the growth of grapes. The purposes for which grapes are grown in Australia are three in number, viz.—(i.) for wine-making, (ii.) for table use, (iii.) for drying. The total area under vines in the several States from 1860 onwards is given in the following table:—

COMMONWEALTH VINEYARDS, 1860-1 to 1909-10.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.		Acres.
1860-1 ...	1,584	1,138	—	3,180	335		6,237
1865-6 ...	2,126	4,078	110	6,629	634		13,577
1870-1 ...	4,504	5,466	416	6,131	710		17,227
1875-6 ...	4,459	5,081	376	4,972	675		15,563
1880-1 ...	4,800	4,980	739	4,337	659		15,515
1885-6 ...	5,247	9,775	1,483	5,142	624		22,271
1890-1 ...	8,044	20,686	1,981	9,535	1,024		41,270
1895-6 ...	7,519	30,275	2,021	17,604	2,217		59,636
1900-1 ...	8,441	30,634	2,019	20,158	3,325		64,577
1901-2 ...	8,606	28,592	1,990	20,860	3,629		63,677
1902-3 ...	8,790	28,374	1,559	21,692	3,528		63,943
1903-4 ...	8,940	28,513	2,069	22,617	3,324		65,463
1904-5 ...	8,840	28,016	2,194	23,210	3,413		65,673
1905-6 ...	8,754	26,402	2,044	23,603	3,541		64,344
1906-7 ...	8,521	25,855	2,070	22,586	3,525		62,557
1907-8 ...	8,483	26,465	1,973	21,080	3,231		61,232
1908-9 ...	8,251	24,430	1,616	22,031	3,122		59,450
1909-10 ...	8,330	22,768	1,695	22,441	2,917		58,151

There are no vineyards in Tasmania.

The area devoted to vines in the Commonwealth attained its highest point in the season 1904-5, when a total of 65,673 acres was reached. In the course of the five following seasons this area diminished by 7522 acres, the decline being in evidence in all the States.

The wine-growing industry in Australia, more particularly in Victoria and New South Wales, received a severe check on account of various outbreaks of phylloxera which took place in different parts of these States. With a view to its eradication extensive uprooting of vineyards in the infested areas was undertaken, while further planting within such areas, except with phylloxera-resisting vines, was prohibited.

In three of the States, viz.; New South Wales, Queensland, and South Australia, small increases in the area under vines were in evidence in 1909-10, while in Victoria and Western Australia fairly considerable decreases were shewn.

2. **Wine Production.**—The production of wine in Australia has not increased as rapidly as the suitability of soil and general favourableness of conditions would appear to warrant. The cause of this is probably twofold, being in the first place due to the fact that the Australians are not a wine-drinking people and consequently do not provide a local market for this product, and in the second to the fact that the new and comparatively unknown wines of Australia find it difficult to establish a footing in the markets of the old world, owing to the competition of well-known brands. Active steps are being taken in various ways to bring the Australian wines under notice, and it may be confidently expected that when their qualities are duly recognised the wine production of Australia will exhibit a rapid development. Particulars concerning the quantity of wine produced in the several States during the past nine seasons are contained in the table given hereunder:—

AUSTRALIAN WINE PRODUCTION, 1901-2 to 1909-10.

Season.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Commonwealth.
	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.		Gallons.
1901-2 ...	868,479	1,981,475	148,835	2,631,563	185,735	No production of wine in Tasmania.	5,816,087
1902-3 ...	806,140	1,547,188	100,852	2,573,424	158,853		5,186,457
1903-4 ...	1,086,820	2,551,150	88,558	2,445,270	138,371		6,260,169
1904-5 ...	928,160	1,832,386	60,433	2,845,853	185,070		5,851,902
1905-6 ...	831,700	1,726,444	66,926	2,755,947	208,911		5,589,928
1906-7 ...	1,140,000	2,044,833	65,016	2,495,434	195,660		5,940,943
1907-8 ...	778,500	1,365,600	90,191	2,061,987	153,755		4,450,033
1908-9 ...	736,262	1,437,106	77,698	3,132,247	132,488		5,515,801
1909-10 ...	808,870	991,941	91,410	2,569,797	140,559		4,602,577

3. **Relation to Population.**—In relation to population the area of the vineyards of the several States exhibits a well-marked decline during the past eight seasons, the Commonwealth total having fallen during the period from 17 to 13 acres per 1000 of the population. Details for the period are furnished in the succeeding table:—

AREA OF VINEYARDS PER 1000 OF POPULATION.

Season.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tas.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901-2	6	24	4	57	19	...	17
1902-3	6	23	3	60	17	...	17
1903-4	6	24	4	62	15	...	17
1904-5	6	23	4	63	14	...	17
1905-6	6	22	3	63	14	...	16
1906-7	6	21	4	59	14	...	15
1907-8	5	21	4	55	12	...	15
1908-9	5	19	3	55	12	...	14
1909-10	5	17	3	54	11	...	13

4. **Imports and Exports.**—During the past nine years the importations of wine into the Commonwealth have exhibited a marked fluctuation, declining continuously in value from £161,945 in 1901 to £96,870 in 1904, thence increasing continuously to £133,114 in 1908 and decreasing again in 1909 to £116,021. The increase in recent years has, however, been entirely in the case of sparkling wine, other wines having declined almost continuously in quantity and value throughout the period. The principal countries of origin of wine imported into Australia are France, Spain, Portugal, and Germany, the greater portion of the sparkling wines coming from France and of still wines from Spain and Portugal. Particulars relative to the importations of wine into the Commonwealth during the past nine years are given hereunder:—

COMMONWEALTH IMPORTS OF WINE, 1901 to 1909.

Year.	Quantity.			Value.		
	Sparkling.	Other.	Total.	Sparkling.	Other.	Total.
	Gallons.	Gallons.	Gallons.	£	£	£
1901	55,341	165,472	220,813	104,700	57,245	161,945
1902	46,824	134,513	181,337	80,941	46,828	127,769
1903	41,211	81,222	122,433	78,869	29,014	107,883
1904	38,738	70,982	109,720	69,643	27,227	96,870
1905	38,933	74,358	113,291	71,753	28,231	99,984
1906	43,324	71,980	115,304	81,448	24,685	106,133
1907	50,393	67,906	118,299	94,549	26,397	120,946
1908	56,806	68,252	125,058	106,108	27,006	133,114
1909	47,669	60,946	108,615	91,046	24,975	116,021

The principal countries to which wine is exported from Australia are the United Kingdom and New Zealand, a small but fairly regular export trade being also carried on with India, Ceylon, Fiji, and the South Sea Islands. Details concerning the exports of wine from Australia during the nine years 1901 to 1909 are given in the following table:—

COMMONWEALTH EXPORTS OF WINE, 1901 to 1909.

Year.	Quantity.			Value.		
	Sparkling.	Other.	Total.	Sparkling.	Other.	Total.
	Gallons.	Gallons.	Gallons.	£	£	£
1901	2,936	863,147	866,083	6,972	122,751	129,723
1902	3,201	1,075,713	1,078,914	5,989	142,994	148,983
1903	2,194	718,284	720,478	4,161	101,016	105,177
1904	2,525	789,032	791,557	4,440	103,272	107,712
1905	2,749	937,932	940,681	4,990	107,988	112,978
1906	2,439	717,821	720,260	4,637	93,046	97,683
1907	2,771	979,527	982,298	5,233	121,811	127,044
1908	2,824	728,421	731,245	4,541	98,333	102,874
1909	2,649	974,413	977,062	4,455	121,116	125,571

The sparkling wine included in the foregoing table consists mainly of foreign wine re-exported.

5. **Interstate Trade.**—A fairly extensive trade in wine is carried on between the States, South Australia being the principal exporting State. Particulars for the year 1909 are furnished hereunder:—

INTERSTATE TRADE IN WINE, 1909.

State.	Imports from other States of the Commonwealth.		Exports to other States of the Commonwealth.		Net Interstate Exports.*	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Gallons.	£	Gallons.	£	Gallons.	£
New South Wales ...	323,246	54,404	57,453	20,734	—265,793	— 33,670
Victoria ...	132,497	21,806	157,149	36,839	24,652	15,033
Queensland ...	111,072	34,721	1,099	448	—109,973	— 34,273
South Australia ...	19,405	4,767	494,077	93,080	474,672	88,313
Western Australia ...	101,142	27,273	1,801	345	— 99,341	— 26,928
Tasmania ...	25,203	8,671	986	196	— 24,217	— 8,475

* — signifies net imports.

6. **Other Viticultural Products.**—In addition to grapes for wine-making purposes large quantities are grown in all the States for table use, whilst, particularly in Victoria and South Australia, the drying of raisins and currants is also carried on. The quantities of table grapes grown in the several States during the past nine seasons are as follows:—

TABLE GRAPES, 1901-2 to 1909-10.

Season.	N.S.W.	Victoria.	Q'land.*	S. Aust.*	W. Aust.*	Tasmania.	C'wealth.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1901-2 ...	3,475	5,110	750	2,800	1,100	...	13,235
1902-3 ...	3,561	4,327	300	2,900	1,200	...	12,288
1903-4 ...	4,213	3,862	780	3,000	1,200	...	13,055
1904-5 ...	2,933	3,186	950	3,100	1,500	...	11,669
1905-6 ...	2,749	3,008	870	3,100	1,700	...	11,427
1906-7 ...	5,470	5,184	1,130	3,000	1,700	...	16,484
1907-8 ...	2,978	3,325	1,044	2,805	2,715	...	12,867
1908-9 ...	3,150	3,018	1,336	3,214	1,982	...	12,700
1909-10 ...	4,181	3,189	1,520	2,496	3,928	...	15,314

* Estimated for seasons prior to 1907-8.

Statistics of the quantities of raisins and currants dried are available for a series of years for Victoria and South Australia, and are as follows for the past nine seasons:—

RAISINS AND CURRANTS DRIED, 1901-2 to 1909-10.

Season.	Raisins.		Currants.	
	Victoria.	Sth. Australia.	Victoria.	Sth. Australia.
	lbs.	lbs.	lbs.	lbs.
1901-2	3,083,665	822,080	285,157	382,256
1902-3	3,979,798	1,294,944	416,890	547,232
1903-4	5,986,060	1,463,056	838,955	1,165,472
1904-5	3,393,117	974,064	669,108	1,423,968
1905-6	4,813,240	1,334,928	717,156	1,629,824
1906-7	10,990,224	1,805,776	1,313,760	1,608,432
1907-8	7,685,104	2,742,656	1,169,280	2,235,184
1908-9	7,788,032	3,136,784	1,336,048	2,738,288
1909-10	9,076,928	3,114,496	3,069,696	4,037,824

In New South Wales, Queensland, and Western Australia also small quantities of raisins and currants are dried, but until recently no statistics were collected. The quantity so produced in New South Wales amounted to 100,912 lbs. in 1907-8, 160,720 lbs. in 1908-9, and 165,984 lbs. in 1909-10. For Queensland and Western Australia there are no particulars available.

§ 15. Orchards and Fruit Gardens.

1. **Nature and Extent.**—Fruit-growing has made rapid progress in the Commonwealth during recent years, the area devoted thereto having increased in the past eight years by no less than 32,023 acres. The States in which the increase was most marked were:—Tasmania, 12,584 acres; Western Australia, 9533 acres; Victoria, 6053 acres; and South Australia, 5445 acres. During the same period the Queensland fruit-growing area increased slightly, while that in New South Wales exhibited a decline of 2556 acres. The increased areas in Tasmania and Western Australia are mainly due to extensive plantings of apple trees with a view to the possibilities of the London market for fresh fruit. The total area devoted to orchards and fruit gardens in the several States is given hereunder:—

COMMONWEALTH ORCHARDS AND FRUIT GARDENS, 1901-2 to 1909-10.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901-2	48,448	50,055	14,396	16,315	6,076	11,485	146,775
1902-3	48,019	50,478	12,818	17,376	6,872	12,675	148,238
1903-4	48,832	51,357	15,607	18,725	7,938	14,134	156,593
1904-5	47,340	52,751	15,882	18,872	9,756	15,461	160,062
1905-6	46,615	52,274	15,390	19,320	11,026	16,519	161,144
1906-7	46,177	54,021	14,249	18,199	12,517	18,050	163,213
1907-8	46,714	54,111	14,397	20,736	13,900	19,441	169,299
1908-9	45,880	54,946	14,104	20,855	15,016	20,757	171,558
1909-10 ...	45,892	56,108	15,360	21,760	15,609	24,069	178,798

The varieties of fruit grown differ materially in various parts of the several States, and range between such fruits as the pineapple, paw-paw, mango, and guava of the tropics, and the strawberry, the raspberry, and the currant of the colder parts of the temperate zone. The principal varieties grown in Victoria are the apple, plum, peach, apricot, cherry, and pear. In New South Wales citrus fruits (orange, lemon, etc.) occupy the leading position, although apples, pears, peaches, plums, and apricots are also extensively grown. In Queensland the banana, the orange, the pineapple, the apple, the peach, the mango, and the plum are the varieties most largely grown. In South Australia, in addition to the apple, pear, peach, apricot, plum, orange, and lemon, the almond and the olive are also largely grown. In Western Australia the apple, orange, peach, pear, plum, fig, and apricot are the sorts chiefly grown, while in Tasmania, although the apple represents more than two-thirds of the area in that State devoted to fruit-growing, small fruits, such as the currant, raspberry, and gooseberry, are very extensively grown, and the balance of the area is mainly occupied with the pear, plum, apricot, peach, and cherry.

2. **Relation to Population.**—In relation to population the orchards and fruit gardens of the Commonwealth have exhibited an increase during the past eight seasons equal to the decline which was experienced in the case of vineyards. Taking the two in conjunction the relative area under vineyards and orchards has, during the period,

remained practically stationary at about 55 acres per 1000 of population. Details for the nine seasons 1901-2 to 1909-10 are as follows :—

AREA OF ORCHARDS AND FRUIT GARDENS PER 1000 OF POPULATION.

Season.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tas.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901-2	35	42	28	45	32	67	38
1902-3	34	42	25	48	33	73	38
1903-4	34	42	30	51	36	80	40
1904-5	33	44	30	51	41	86	40
1905-6	32	43	29	52	44	92	40
1906-7	31	44	27	48	48	101	40
1907-8	30	44	27	54	53	108	40
1908-9	29	44	26	52	56	112	40
1909-10	28	43	27	52	57	129	41

3. **Commonwealth Imports and Exports.**—A very considerable fruit trade, both import and export, is carried on by the Commonwealth with oversea countries, the major portion of the importations consisting of dried fruits, while the bulk of the exports is made up of fresh fruits. Amongst the imports the principal dried fruits are currants, dates, sultanas, and raisins, and the principal fresh fruits bananas, oranges, lemons, and apples. The currants imported are mainly of Greek origin, the dates of Arabian, Persian, and Turkish, the raisins mainly of French and Turkish, and the sultanas of Turkish origin. Of the fresh fruits imported during 1909 the bananas were chiefly from Fiji, the oranges and lemons from Italy, and the apples from the United States. The dried fruits imported during the year were valued at £121,059, and the fresh at £146,081. In 1907 a very marked development in the trade in Australian dried fruits took place, the total export for the year being valued at £76,872, of which £71,506 represented Australian fruits and £5366 re-exports of foreign fruits. In 1908 the total export of dried fruits from Australia was valued at £35,359, of which £33,111 represented Australian fruits, and £2248 re-exports of foreign fruits. There was a further decline in 1909, when the total value of exports was only £13,013, made up of £11,826 of Australian produce, and £1187 of re-exports. The Australian dried fruits exported consisted mainly of raisins, the principal consignees being the United Kingdom, Canada, and New Zealand. The fresh fruits exported during the year were valued at £243,699, and consisted mainly of apples. The principal countries to which these were sent were the United Kingdom, France, New Zealand, Brazil, Java, and India. Particulars concerning the oversea imports and exports of dried fruits for the nine years 1901 to 1909 are as follows :—

COMMONWEALTH OVERSEA IMPORTS AND EXPORTS OF DRIED FRUITS,
1901 TO 1909.

Year.	Oversea Imports.		Oversea Exports.		Net Imports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	lbs.	£	lbs.	£	lbs.	£
1901	14,265,731	179,305	831,996	14,206	13,433,735	165,099
1902	15,312,229	165,926	942,342	14,024	14,369,887	151,902
1903	13,479,256	106,439	913,008	11,775	12,566,248	94,664
1904	14,267,310	107,117	1,729,725	18,497	12,537,585	88,620
1905	17,285,240	134,178	344,174	5,579	16,941,066	128,599
1906	15,659,620	137,732	187,710	2,752	15,471,910	134,980
1907	13,250,392	134,736	5,281,608	76,872	7,968,784	57,864
1908	10,351,443	99,518	2,509,640	35,359	7,841,803	64,159
1909	13,242,198	121,059	1,089,730	13,013	12,152,468	108,046

Similar information with regard to the Commonwealth oversea trade in fresh fruits for the same period is contained in the table given hereunder :—

COMMONWEALTH OVERSEA IMPORTS AND EXPORTS OF FRESH FRUITS, 1901 TO 1909.

Year.	Oversea Imports.		Oversea Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Centals.	£	Centals.	£	Centals.	£
1901	*	45,955	*	167,926	*	121,971
1902	*	57,744	*	142,613	*	84,869
1903	91,976	47,303	371,158	216,992	279,182	169,689
1904	50,397	31,137	467,343	263,767	416,946	232,630
1905	49,659	32,654	393,982	207,418	344,323	174,764
1906	204,561	82,655	265,743	173,190	61,182	90,535
1907	189,052	95,015	435,534	266,160	246,482	171,145
1908	166,341	107,666	377,926	263,307	211,585	155,641
1909	250,311	146,081	372,308	243,699	121,997	97,618

* Not available.

4. **Interstate Trade.**—The interstate trade in fresh fruits is very considerable, and for 1909 represented a value of over £576,000. Details concerning the interstate exports of the several States for that year are as follows :—

INTERSTATE EXPORTS OF FRESH FRUITS, 1909.

Fruits.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Total.
QUANTITY.							
	Centals.	Centals.	Centals.	Centals.	Centals.	Centals.	Centals.
Apples ...	81,430	22,680	202	8,223	20	168,652	281,207
Bananas ...	9,384	9,071	206,819	2,581	...	...	227,855
Citrus fruits ...	86,089	6,506	23,111	18,987	47	2	134,742
Pineapples ...	925	838	66,759	24	...	...	68,546
Other fresh fruits	35,130	89,923	5,782	21,178	34	54,103	206,150
Total ...	212,958	129,018	302,673	50,993	101	222,757	918,500
VALUE.							
	£	£	£	£	£	£	£
Apples ...	54,857	17,043	148	6,134	17	124,023	202,222
Bananas ...	7,564	8,091	76,184	2,034	...	...	93,873
Citrus fruits ...	52,098	6,882	14,854	14,940	34	3	88,811
Pineapples ...	644	529	33,955	18	...	...	35,146
Other fresh fruits	25,420	70,279	4,862	16,229	35	39,293	156,118
Total ...	140,583	102,824	130,003	39,355	86	163,319	576,170

Corresponding particulars concerning the interstate importations of fresh fruits for the same year are as follows :—

INTERSTATE IMPORTS OF FRESH FRUITS, 1909.

Fruits.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Total.
QUANTITY.							
	Centals.	Centals.	Centals.	Centals.	Centals.	Centals.	Centals.
Apples ...	164,846	9,415	93,208	8,746	3,594	1,398	281,207
Bananas ...	31,213	131,526	...	41,199	11,876	12,041	227,855
Citrus fruits ...	10,432	101,575	6,899	124	4,894	10,818	134,742
Pineapples ...	36,588	28,513	...	1,835	69	1,541	68,546
Other fresh fruits	142,886	5,381	37,477	1,259	3,490	15,657	206,150
Total ...	385,965	276,410	137,584	53,163	23,923	41,455	918,500
VALUE.							
	£	£	£	£	£	£	£
Apples ...	122,743	5,591	62,184	7,999	2,871	834	202,222
Bananas ...	12,614	43,407	...	18,111	9,576	10,165	93,873
Citrus fruits ...	8,198	58,243	8,265	138	4,900	9,067	88,811
Pineapples ...	20,924	11,713	...	1,386	56	1,067	35,146
Other fresh fruits	109,474	3,059	28,116	1,495	3,803	10,171	156,118
Total ...	273,953	122,013	98,565	29,129	21,206	31,304	576,170

From the foregoing tables it will be seen that the value of the fresh fruits imported from other States exceeded the value of the exports to other States in three cases, viz., in New South Wales, Victoria, and Western Australia, while in the other three States the interstate exports exceeded the imports. The heaviest interstate exportation of apples for the year took place from Tasmania, of bananas and pineapples from Queensland, of citrus fruits from New South Wales, and of "other fresh fruits" from Victoria. On the other hand, the heaviest importer of apples, pineapples, and "other fresh fruits" was New South Wales, while Victoria was the heaviest importer of citrus fruits and bananas.

A very large interstate trade in dried fruits is also carried on, the trade of 1909 representing a value of £236,704. Particulars concerning the interstate exports of the veral States are given hereunder :—

INTERSTATE EXPORTS OF DRIED FRUITS, 1909.

Fruits.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Total.
QUANTITY.							
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
Currants ...	74,136	853,263	10,351	2,029,020	...	7,116	2,973,886
Sultanas ...	52,857	2,386,522	5,772	634,445	420	8,618	3,088,634
Other raisins ...	20,588	1,309,286	1,939	847,424	...	5,992	2,185,229
Dates ...	39,866	248,874	3,363	39,628	...	3,930	335,661
Oth'r dried fruits	75,840	724,195	4,196	769,232	3,815	447,479	2,024,757
Total ...	263,287	5,522,140	25,621	4,319,749	4,235	473,135	10,608,167

INTERSTATE EXPORTS OF DRIED FRUITS—(continued).

Fruits.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Total.
			VALUE.				
	£	£	£	£	£	£	£
Currants ...	1,348	17,054	170	40,818	....	148	59,538
Sultanas ...	1,145	55,464	123	17,055	7	213	74,007
Other raisins ...	447	26,038	47	16,792	....	96	43,420
Dates ...	408	2,213	35	409	...	49	3,114
Oth'r dried fruits	1,907	19,264	134	23,643	93	11,584	56,625
Total ...	5,255	120,033	509	98,717	100	12,090	236,704

Corresponding details relative to the interstate imports of dried fruits into the several States are as follows:—

INTERSTATE IMPORTS OF DRIED FRUITS, 1909.

Fruits.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Total.
			QUANTITY.				
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
Currants ...	1,082,614	506,512	777,545	13,953	340,309	252,953	2,973,886
Sultanas ...	2,004,058	43,749	735,457	22,191	139,144	144,035	3,088,634
Other raisins ...	1,228,020	12,577	454,592	35,109	254,740	200,191	2,185,229
Dates ...	67,847	9,923	37,844	23,348	15,602	181,097	335,661
Oth'r dried fruits	773,580	93,869	856,040	19,861	179,916	101,491	2,024,757
Total ...	5,156,119	666,630	2,861,478	114,462	929,711	879,767	10,608,167
			VALUE.				
	£	£	£	£	£	£	£
Currants ...	17,871	10,622	18,259	314	7,596	4,876	59,538
Sultanas ...	48,417	862	17,556	408	3,310	3,454	74,007
Other raisins ...	23,986	237	8,857	864	5,291	4,185	43,420
Dates ...	605	161	338	202	205	1,603	3,114
Oth'r dried fruits	21,545	2,420	24,928	472	5,254	2,006	56,625
Total ...	112,424	14,302	69,938	2,260	21,656	16,124	236,704

A large proportion of the dried fruits recorded in the above tables is the production of the irrigation colonies of Mildura in Victoria, and Renmark, in South Australia. The heaviest interstate export of sultanas and "other raisins" took place from Victoria, while South Australia headed the list with interstate exports of currants and "other dried fruits." The only other State which exported at all largely was Tasmania with 447,479 lbs. of "other dried fruits," valued at £11,584. The principal importing States were New South Wales, Queensland, and Western Australia, in the order named. The principal fruits included above under the head of "other dried fruits" are prunes, apricots, and apples.

5. **Jams and Jellies.**—A small oversea trade in jams and jellies is carried on by the Commonwealth, the value of the imports for the year 1909 amounting to £7956, and of the exports to £26,124. The country of origin of the bulk of the importations is the United Kingdom, while the destinations of the exports are principally Portuguese East Africa, South Africa, the Philippine Islands, Ceylon, and Fiji. Particulars relative to imports and exports for the nine years 1901 to 1909 are as follows:—

COMMONWEALTH OVERSEA TRADE IN JAMS AND JELLIES, 1901 to 1909.

Year.	Oversea Imports.		Oversea Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	lbs.	£	lbs.	£	lbs.	£
1901 ...	1,312,377	23,358	4,140,072	64,389	2,827,695	41,031
1902 ...	837,746	13,207	5,159,688	77,833	4,321,942	64,626
1903 ...	379,300	7,410	2,097,371	40,386	1,718,071	32,976
1904 ...	384,159	7,270	1,526,747	21,962	1,142,588	14,692
1905 ...	317,182	7,010	1,772,524	25,385	1,455,342	18,375
1906 ...	379,129	8,277	1,580,228	24,009	1,201,099	15,732
1907 ...	297,634	6,967	1,639,239	24,561	1,341,605	17,594
1908 ...	280,525	6,898	1,714,060	26,155	1,433,535	19,257
1909 ...	334,738	7,956	1,706,400	26,124	1,371,662	18,168

The trade carried on in jams and jellies between the States of the Commonwealth is a much more extensive one, the exporting States being Tasmania and Victoria, and the importing States Queensland, Western Australia, New South Wales, and South Australia. Details for the year 1909 are furnished in the table hereunder:—

INTERSTATE TRADE IN JAMS AND JELLIES, 1909.

State.	Imports from other States of the Commonwealth.		Exports to other States of the Commonwealth.		Net Interstate Exports.*	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	lbs.	£	lbs.	£	lbs.	£
New South Wales ...	6,110,999	85,393	3,390,559	41,127	— 2,720,440	— 44,266
Victoria	1,681,961	18,056	7,435,413	101,859	5,753,452	83,803
Queensland	8,049,516	103,202	454,844	8,189	— 7,594,672	— 95,013
South Australia ...	1,509,453	21,633	1,355,350	18,122	— 154,103	— 3,511
Western Australia ...	4,323,969	57,379	48	2	— 4,323,921	— 57,377
Tasmania	978,560	11,841	10,018,244	128,205	9,039,684	116,364

* — signifies net imports.

6. **Preserved Fruit.**—Details concerning the quantities and values of preserved fruit imported into and exported from the Commonwealth cannot readily be obtained, owing to the fact that in the Customs returns particulars concerning fruit and vegetables are in certain cases combined. The total value of fruit and vegetables, other than fresh fruits, dried fruits, potatoes, and onions, imported into Australia during 1909 was £44,666, and the corresponding value of exports was £22,128.

§ 16. Minor Crops.

1. **Nature and Extent.**—In addition to the leading crops which in the foregoing pages have been dealt with in some detail, there are many others which, owing either to their nature or to the fact that their cultivation has advanced but little beyond the experimental stage, do not occupy so prominent a position. Some of the more important of these are those which may be classed under the heads of Market Gardens, Nurseries, Grass Seed, Tobacco, Hops, and Millet, while the possibilities of Cotton-growing in the tropical portions of the Commonwealth have in recent years received considerable attention, although the industry cannot yet be said to have assumed definite shape. The total area in the Commonwealth during the season 1909-10 devoted to minor crops was 69,798 acres, of which market gardens accounted for 31,130 acres.

2. **Market Gardens.**—Under this head are included all areas on which are grown mixed vegetables for sale. Where considerable areas are devoted to the production of one vegetable, such for instance as the potato, the onion, the melon, the tomato, etc., these crops are usually not included with market gardens, but are shewn either under some specific head, or under some such general head as "Other Root Crops," or "All other Crops." The area under market gardens in the several States of the Commonwealth during each of the nine seasons 1901-2 to 1909-10 is given in the table hereunder:—

COMMONWEALTH MARKET GARDENS, 1901-2 to 1909-10.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901-2 ...	7,834	8,752	2,328	9,005	2,142	1,746	31,807
1902-3 ...	8,263	7,937	2,171	9,489	2,262	1,893	32,015
1903-4 ...	8,754	8,455	2,563	9,964	2,463	1,685	33,884
1904-5 ...	8,827	7,904	2,099	10,160	3,538	1,759	34,287
1905-6 ...	9,119	7,333	2,089	10,688	3,550	1,778	34,557
1906-7 ...	9,550	7,906	1,953	8,379	3,789	2,210	33,787
1907-8 ...	10,052	9,022	2,365	2,961	3,543	1,791	29,734
1908-9 ...	10,331	9,279	2,875	2,818	3,471	1,603	30,377
1909-10 ...	10,254	10,214	2,677	2,784	3,481	1,720	31,130

The decline in the Commonwealth total for the season 1907-8 is due to the marked decrease in the area devoted to market gardens in South Australia, and to the smaller falling-off in the cases of Western Australia and Tasmania. In all the other States the area for 1907-8 was in excess of that for 1906-7. In the case of South Australia the falling-off is more apparent than real, being in large part due to a change in the classification of such crops introduced in connection with the new system of collection which came into force for 1907-8. It is believed that the figures given for the earlier years are considerably in excess of the truth.

3. **Grass Seed.**—Particulars concerning the growth of grass seed are available for 1909-10 for all the States except Western Australia. The total area under this crop during that season was 5505 acres, of which 2890 acres were in Tasmania, 1595 acres in Victoria, 705 acres in Queensland, 207 acres in New South Wales, and 108 acres in South Australia. The total yield for 1909-10 was 79,234 bushels, or 14.39 bushels per acre.

4. **Tobacco.**—The tobacco-growing industry is one which has experienced marked fluctuations in Australia and which once promised to occupy an important place amongst the agricultural industries of the Commonwealth. Thus, as early as the season 1888-9 the area under this crop amounted to as much as 6641 acres, of which

4833 were in New South Wales, 1685 in Victoria, and 123 in Queensland. This promise of prosperity was, however, not fulfilled, and after numerous fluctuations, in the course of which the Victorian area rose in 1895 to over 2000 acres, and that in Queensland to over 1000 acres, the total area under tobacco for the season 1908-9 was only 1874 acres, distributed as follows:—New South Wales, 959 acres; Victoria, 321 acres; and Queensland, 594 acres. This decline in production appears to have been due to the comparatively small demand which existed in Australia for the locally-produced leaf, and to the fact that the cost of production and preparation in the Commonwealth prevented the Australian leaf from obtaining a footing in the outside markets. Probably under more favourable circumstances, and with greater attention given to the production of leaf of the best quality only, the industry is one which will eventually, in Australia, assume considerable proportions. In all the States in which its cultivation has been tried the soil and climate appear to be very suitable for the growth of the plant, and the enormous importations of tobacco in its various forms into the Commonwealth furnish an indication of the extensive local market which exists for an article grown and prepared in such a manner as to meet with the requirements of consumers. The value of the net importations of tobacco into the Commonwealth during the year 1909 amounted to £486,738, comprising unmanufactured tobacco (£327,492), cigars (£105,736), cigarettes £34,530), manufactured tobacco (£18,093), and snuff (£887).

5. **Hops.**—Hop-growing in the Commonwealth is practically confined to Tasmania and some of the cooler districts of Victoria, the total area for the season 1909-10 being 1084 acres, of which 944 acres were in Tasmania, and 140 acres in Victoria. The Tasmanian area, though still small, has increased rapidly during the past eight years, the total for the season 1901-2 being only 599 acres. On the other hand, the Victorian area, which in 1901-2 was 307 acres, has diminished to 140 acres in 1909-10. The cultivation of hops was much more extensive in Victoria twenty-five years ago than at present, the area devoted to this crop in 1883-4 being no less than 1758 acres. During the year 1909 the net importations of hops into the Commonwealth represented a weight of 790,665 lbs. and a value of £35,510. The total value of the net importations of hops into Australia during the past eight years amounted to £440,821, thus indicating the existence of a regular and extensive local demand.

6. **Millet.**—Millet appears in the statistical records of three of the Commonwealth States, viz., New South Wales, Victoria, and Queensland. The total area devoted thereto in 1909-10 was 2514 acres, by far the greater portion, viz., 2099 acres, being in New South Wales. The particulars here given relate to millet grown for grain and fibre. That grown for green forage is dealt with in the section relating thereto.

7. **Nurseries.**—In all the States somewhat extensive areas are devoted to nurseries for raising plants, trees, etc., but statistics concerning the area so occupied for flowers, fruit trees, etc., are not available, and so far as they relate to forestry are given elsewhere.

8. **Cotton.**—Cotton-growing on a small scale has been tried in Queensland, but so far without very marked success. The area under cotton has fluctuated very considerably during the past five years, ranging during that period between 138 acres in 1906-7 and 540 acres in 1908-9. During 1909-10, 509 acres were devoted to this crop, giving a yield of 129,245 lbs of seed cotton, valued at £3231. Hopes are entertained that with the invention of a mechanical device for the picking of the cotton the industry will become firmly established, since the soil and conditions appear eminently suitable for the growth of this crop. Small areas in the Northern Territory have also been planted with cotton, while the tropical portions of Western Australia have long been regarded as suitable for its cultivation.

9. **Coffee.**—Queensland is the only State of the Commonwealth in which coffee-growing has been at all extensively tried, and here the results have up to the present

time been far from satisfactory. The total area devoted to this crop reached its highest point in the season 1901-2, when an area of 547 acres was recorded. Since then the area continuously declined to 1906-7, when it was as low as 256 acres. During the season 1907-8 an improvement occurred and the total reached was 304 acres, succeeded by a fall to 285 acres in 1908-9 and 194 acres in 1909-10. In the last-mentioned season the yield amounted to 89,070 lbs., valued at £3340.

10. **Other Crops.**—Miscellaneous small crops are grown in the several States, amongst which may be mentioned pumpkins, melons, tomatoes, rhubarb, artichokes, arrowroot, chicory, and flowers.

§ 17. Bounties on Agricultural Products.

1. **General.**—The Bounties Act of 1907 passed by the Federal Parliament in order to encourage the manufacture and production of certain articles in the Commonwealth, includes among the number of items on which bonuses are payable, several agricultural products. The most important of these, viz., sugar, has been referred to on page 398 of this publication. Minor products of the soil on which these bounties are payable are as set out in the following table :—

AGRICULTURAL PRODUCTS (OTHER THAN SUGAR) ON WHICH BOUNTIES ARE PAYABLE.

Article.	Period dating from 1st July, 1907, during or in respect of which Bounty may be paid.	Rates of Bounty.	Maximum amounts which may be paid in any one year.
			£
Cotton, ginned	8 years	10 % on market value	6,000
Fibres—			
New Zealand flax	10 „	10 „ „	3,000
Flax and hemp	5 „	10 „ „	8,000
Jute	5 „	20 „ „	9,000
Sisal hemp	10 „	10 „ „	3,000
Oil materials supplied to an oil factory for the manufacture of oil			
Cottonseed	8 „	10 „ „	1,000
Linseed (flax seed)	5 „	10 „ „	5,000
Rice, uncleaned	5 „	20s. per ton	1,000
Coffee, raw, as prescribed ...	8 „	1d. per lb.	1,500
Tobacco leaf for the manufacture of cigars, high grade, of a quality to be prescribed	5 „	2d. „	4,000
Fruits—			
Dates (dried)	15 „	1d. „	1,000
Dried (except currants and raisins) or candied, and exported ...	5 „	10 % on market value	6,000

Although the rate of bonus on the several articles, is, as shewn above, fairly liberal, the bounties have not been availed of to any great extent, as will be seen from the following table, which gives particulars as to the quantity of the articles raised and the amount paid as bounties in respect therewith for the three financial years which have elapsed since the operation of the Act :—

PARTICULARS OF BOUNTIES PAID ON AGRICULTURAL PRODUCTS (OTHER THAN SUGAR), 1907-8 to 1909-10.

Article.	Quantity produced on which Bounties were paid.			Amount paid as Bounties.		
	1907-8.	1908-9.	1909-10	1907-8.	1908-9.	1909-10.
				£	£	£
Cotton, ginned ... ... lbs.	662	21,865	24,994	10	32	34
Fibres—						
Flax and hemp ... tons	...	32	28	...	126	120
Sisal hemp ... ... ,,	...	14	11	...	34	25
Oil materials supplied to an oil factory for the manufacture of oil—						
Cottonseed ... ... lbs.	...	36,491	45,610	...	12	10
Linseed (flax seed) ... cwt.	...	36	...	...	6	...
Coffee, raw, as prescribed... lbs.	2,111	53,365	28,134	9	222	117
Tobacco leaf for the manufacture of cigars, high grade, of a quality to be prescribed ... ... lbs.	...	14,538	33,093	...	121	276
Fruits—						
Dried (except currants and raisins) or candied, and exported lbs.	54,992	12,096	23,932	1,061	28	104

During the year 1909-10 the total amount paid in respect of cotton, sisal hemp, cottonseed, and coffee was claimed by the State of Queensland. Tasmania collected the whole of the fruit bonus, while £270 of the bounty paid for tobacco leaf was paid to Queensland, the remaining £6 being earned in Victoria. The lastmentioned State also claimed the total amount paid for flax and hemp.

No bounties have yet been paid on New Zealand flax, jute, uncleaned rice or dates.

§ 18. Fertilisers.

1. **General.**—In the early days of settlement and cultivation in the Commonwealth, scientific cultivation was in a much less developed state than it is to-day. The early farmers were neither under the necessity, nor were they as a rule aware of the need, of supplying the constituents to the soil demanded by each class of crop. The widely-divergent character of the soils in the Commonwealth, their degeneration by repeated cropping, the limitations of climatic conditions, the difficulties of following any desired order of rotation of crops, all rendered it necessary to give attention to artificial manuring. The introduction of the modern seed-drill, acting also as a fertiliser distributor, has greatly facilitated the use of artificial manures, and much land formerly regarded as useless for cultivation has now been made available. There is reason to believe that this feature will be even more strikingly characteristic of the future.

2. **Fertilisers Acts.**—In order to protect the interests of users of artificial manures legislation has been passed in each of the States, regulating the sale and preventing the adulteration of fertilisers. The following is a list of such Acts in force:—

New South Wales ...	The Fertilisers Act of 1904.
Victoria	The Artificial Manures Acts of 1904 and 1910.
Queensland ...	The Fertilisers Act of 1905.
South Australia ...	The Fertilisers Act of 1900; amended 1903.
Western Australia ...	The Fertilisers and Feeding Stuffs Act of 1904; amended 1905.
Tasmania	The Manures Adulteration Acts of 1893 and 1898.

As regards their main features these measures are practically identical. The words "fertiliser" and "manure," as used in these Acts, mean any substance containing nitrogen, phosphoric acid, or potash, manufactured, produced, or prepared in any manner for the purpose of fertilising the soil or supplying nutriment to plants, but do not include farm-yard or stable manure or similar articles in their natural or unmanufactured state. The Acts provide that every vendor of fertilisers must, within a stated period, forward to the Secretary of Agriculture, or corresponding officer, samples of the fertilisers on sale by him, together with the distinctive name or brands by which they are known, and the price at which he intends to sell during the year. On every bag, package, or bundle of fertiliser sold, or exposed for sale, he must attach a printed label shewing thereon:—

(i.) The number of net pounds of fertiliser in such bag or parcel;

(ii.) The figure or trade mark attached to the fertiliser and intended to identify it;

(iii.) The proportion per centum of nitrogen, phosphoric acid, and potash contained therein.

In addition to the above the vendor must furnish every purchaser with an invoice certificate, signed by himself or his agent, stating his full name and place of business and the quality of the fertiliser sold.

Any officer or analyst appointed under the Acts may enter any manufactory, warehouse, store, vessel, wharf, railway station, conveyance, or other place where fertiliser is manufactured, stored, exposed for sale, or in course of delivery or transit, and demand and take samples of such fertiliser. Every sample so taken must be divided by such officer into three parts, and each marked, sealed, and fastened by him in the presence of the person in charge, and disposed of as follows:—

(i.) One part to be taken by person in charge.

(ii.) One part to be used for analysis.

(iii.) One part to be retained by the officer for future comparison.

Every buyer of fertiliser is entitled to submit a sample to the analyst appointed under the Act, and receive a certificate of its analysis. If the analysis prove it to be under what it is represented to be, the vendor must pay the cost of analysis.

3. **Imports.**—The local production of artificial manures falls short of the existing demand, and large quantities are consequently imported.

The importation of fertilisers has increased over 100 per cent. during the nine years of Federation. The chief items, both as regards quantity and value, are those relating to phosphates, a fertiliser apparently very suitable for the growing of cereals in Australian soils. The greater quantity of the manufactured superphosphates is obtained from the United Kingdom, whence came over 66 per cent. of the total imported during 1909, while the Netherlands contributed about 30 per cent. Ocean Island with about 80 per cent. is the principal contributor of rock phosphates, the balance being obtained from Christmas Island. Guano is imported chiefly from Ocean Island, one of the South Sea group, and in lesser quantities from Malden and Surprise Island, while India has practically a monopoly of the bone-dust trade with the Commonwealth.

The increasing demand for artificial manures is shewn in the following table. It will be noticed that the quantity of rock phosphates imported during the last two years has shewn a marked increase over previous years, while the figures for the manufactured superphosphates shew a corresponding decrease.

COMMONWEALTH IMPORTS OF FERTILISERS, 1905 to 1909.

Fertiliser.		1905.	1906.	1907.	1908.	1909.
Bonedust	Cwt.	64,241	80,625	93,798	74,657	71,959
"	£	15,849	20,094	24,103	18,088	17,632
Guano	Cwt.	534,573	818,580	606,630	696,660	468,215
"	£	68,088	103,953	75,130	84,961	56,723
Superphosphates ...	Cwt.	1,240,403	1,153,249	780,464	610,596	757,515
" " ...	£	192,178	170,514	133,352	94,203	105,229
Rock Phosphates ...	Cwt.	306,592	547,079	769,630	1,267,665	1,006,030
" "	£	38,327	70,782	103,609	183,817	143,246
Other	Cwt.	33,736	84,979	227,689	197,240	151,241
"	£	10,126	24,659	52,975	60,676	38,007
Total ...	Cwt.	2,179,545	2,684,512	2,478,211	2,846,818	2,454,960
	£	324,568	390,002	389,169	441,745	360,837

4. **Exports.**—The subjoined table shews the exports of artificial manures for the years 1905 to 1909. Practically the whole of the fertiliser is manufactured locally, and is shipped mainly to New Zealand and the Pacific Islands :—

COMMONWEALTH EXPORTS OF FERTILISERS, 1905 to 1909.

Fertiliser.		1905.	1906.	1907.	1908.	1909.
Bonedust	Cwt.	56,822	57,845	59,878	65,491	62,637
"	£	13,988	14,217	16,001	17,069	16,571
Guano	Cwt.	1,020	6,000	5,000	...	...
"	£	178	1,050	875	...	...
Superphosphates ...	Cwt.	100,352	110,530	194,943	250,236	235,939
" " ...	£	20,260	22,110	41,041	47,418	44,041
Rock Phosphates ...	Cwt.	...	4,000	5,028	5,077	3,320
" " ...	£	...	782	1,062	1,145	658
Soda Nitrate ...	Cwt.	...	...	1,980	429	3,579
"	£	...	...	1,168	222	2,075
Ammonia Sulphate	Cwt.	...	...	...	70,258	69,894
" " ...	£	...	...	...	45,915	42,766
Other	Cwt.	130,790	109,849	148,816	120,524	177,189
"	£	35,003	34,571	50,813	28,565	33,880
Total ...	Cwt.	288,984	288,224	415,645	512,015	552,558
	£	69,429	72,730	110,960	140,334	139,991

5. **Statistics of Use of Fertilisers.**—The only statistics available in connection with the use of manures in the Commonwealth are those of Victoria, South Australia, and Western Australia. Particulars concerning the first-mentioned State are given hereunder :—

FERTILISERS USED IN VICTORIA, 1901-2 to 1909-10.

Season.	Total Area of Crops.	Farmers Using Manure.	Area Manured.		Manure Used.	
			Aggregate.	Percentage to Total Area of Crop.	Natural (Stable-yard, etc.).	Artificial.
	Acres.	No.	Acres.	%	Tons.	Tons.
1901-2 ...	2,965,681	11,439	556,777	18.77	153,611	23,535
1902-3 ...	3,246,568	18,537	1,099,686	33.87	206,676	36,630
1903-4 ...	3,389,069	19,921	1,205,443	35.57	207,817	41,639
1904-5 ...	3,321,785	20,167	1,521,946	45.82	190,903	45,940
1905-6 ...	3,219,962	21,586	1,791,537	55.64	210,507	54,674
1906-7 ...	3,303,586	23,072	1,985,148	60.09	205,906	60,871
1907-8 ...	3,232,523	23,733	2,018,079	62.43	232,394	62,337
1908-9 ...	3,461,761	24,437	2,053,987	59.33	235,492	64,715
1909-10 ...	3,658,535	26,690	2,407,331	65.80	197,446	77,579

The figures relating to the use of fertilisers in South Australia, for the only years for which they are available, are shewn in the table below :—

FERTILISERS USED IN SOUTH AUSTRALIA, 1907-8 to 1909-10.

Season.	Total Area of Crops.	Area Manured.		Manure Used.	
		Aggregate.	Percentage to Total Area of Crop.	Natural (Stable-yard, etc.).	Artificial.
	Acres.	Acres.	%	Loads.	Tons.
1907-8	2,265,017	1,573,861	69.49	124,092	60,008
1908-9	2,321,812	1,712,394	73.75	120,648	64,842
1909-10 ...	2,530,301	2,031,832	80.30	133,935	76,413

Corresponding particulars relative to Western Australia for the seasons 1904-5 to 1908-9 are given in the following table, and furnish interesting evidence of the rapid extension of the use of manures in that State:—

FERTILISERS USED IN WESTERN AUSTRALIA, 1904-5 to 1908-9.

Season.	Total Area of Crops.	Area Manured.		Manure Used.	
		Aggregate.	Percentage to Total Area of Crops.	Natural (Stable-yard, etc.).	Artificial.
	Acres.	Acres.	%	Loads.	Tons.
1904-5	327,391	205,923	63.90	72,523	10,787
1905-6	364,704	257,469	70.60	83,033	12,676
1906-7	460,825	340,401	73.87	81,653	16,127
1907-8	493,837	391,146	79.21	73,809	17,273
1908-9	585,339	493,545	84.32	61,834	21,358

A marked increase in the proportion of cropped land treated with manure is in evidence in all three of the States for which returns are available. Thus in Victoria the area of manured land represented in 1901-2 only 18¾ per cent. of the area under crop, as against 65¾ per cent. in 1909-10. Similarly in South Australia the percentage increased from 69½ per cent. in 1907-8 to 80¾ per cent. in 1909-10, and in Western Australia from 64 per cent. in 1904-5 to 84¼ per cent. in 1908-9.

6. **Local Production of Fertilisers.**—Statistics relative to the local production of fertilisers are necessarily very incomplete, and detailed returns for fertiliser factories other than bone mills are not available. The number of firms engaged in the manufacture of artificial manures in the Commonwealth during the year 1909 was 108, made up as follows:—New South Wales, 23; Victoria, 37; Queensland, 15; South Australia, 14; Western Australia, 7; and Tasmania, 12. If, however, approximately complete returns of the quantities of fertilisers used in the various States could be given, a comparison with the importations would give valuable information, but, as already mentioned, such particulars are only available for three of the States, and even then do not furnish the whole of the information necessary.

7. **Benefits Derived from the Use of Fertilisers.**—There is little doubt that the increased and increasing use throughout the Commonwealth of fertilisers, natural and artificial, combined with the greater attention being devoted to fallowing and to the combination of sheep-farming with agriculture, is having the effect of improving the prospects of those dependent for a livelihood on the products of the soil. Reference has previously been made to the loss to the soil of phosphoric acid which the Commonwealth export of wheat and its milled products involves, and the necessity which thus arises for returning this ingredient in some form. Similarly, other staple products exported impose their respective tolls upon the soil of the Commonwealth, and the increased use of fertilisers furnishes evidence that producers are alive to the necessity for making good the deficiency so arising.

§ 19. Ensilage.

1. **Value to Stockowners.**—The use of ensilage as a substitute for green fodder during periods of drought or spells of dry weather, or for winter use, is less extensive in Australia than the circumstances would appear to warrant. There is, however, a growing disposition on the part of dairy farmers to make silos on their holdings, as they find that dairy cattle eat ensilage greedily, and that by its means the output of milk, both in regard to quantity and quality, may be kept up long after the supply of ordinary green food is exhausted. Sheepbreeders are also recognising the fact that during protracted periods of dry weather the silo enables them to keep their stock in good condition, and that lambing can take place satisfactorily. Ensilage thus obviates the expense of travelling or trucking sheep for hundreds of miles to get beyond the drought area, or the equally costly and even ruinous alternative of providing chaff for food at high prices and costly freight. In the rearing of lambs for the London market, ensilage appears to be destined to play an important part, as the lambs thrive upon it much better than upon dry food. By the judicious economising of the surplus growth of green food with the use of the silo, farmers and squatters can carry more stock on their holdings than they otherwise would be justified in doing. Not only is the great waste of superabundant food thus avoided, but it becomes possible to change into a succulent and nutritious food much growth that in any other state would not be eaten by stock. Thus such vegetation as marsh mallows, thistles, weeds of all sorts, and even the swamp reed *Arundo phragmites*, which grows in great quantities in lagoons, billabongs, and swamps, are all eaten with avidity when offered to stock in the form of ensilage. The pit and stack silos are rapidly being superseded by those built of red gum and hardwood or concrete. This is found to a great extent to obviate the loss sustained by mould, at the same time reducing the risk of fire. The silos vary in capacity from forty to 130 tons. A portable silo made of iron which has been devised, is made in sections of such size and weight as to admit of ready handling. These silos can be increased in diameter or height by the addition of further sections.

2. **Government Assistance in the Production of Ensilage.**—The Government of Victoria, recognising the fact that defective methods of making ensilage have often been adopted, leading to partial or total failure, is making special efforts to educate the farming community in this respect, so that mistakes may be avoided and the conditions essential for the production of good ensilage may be better appreciated. These conditions vary with the climate and with the locality.

3. **Quantity Made.**—Particulars concerning the number of silos and the quantity of ensilage made in the several States of the Commonwealth in the seasons 1905-6 to 1909-10 are furnished in the table given hereunder:—

COMMONWEALTH ENSILAGE-MAKING, 1905-6 to 1909-10.

State.	1905-6.		1906-7.		1907-8.		1908-9.		1909-10.	
	*Holdings.	Ensilage Made.	*Holdings.	Ensilage Made.	*Holdings.	Ensilage Made.	*Holdings.	Ensilage Made.	*Holdings.	Ensilage Made.
	No.	Tons.	No.	Tons.	No	Tons.	No	Tons.	No.	Tons.
New South Wales	†	9,321	†	11,849	212	12,856	300	27,468	364	34,182
Victoria	160	7,240	210	10,581	203	11,031	392	18,205	518	27,280
Queensland	†	1,199	44	3,201	63	2,949	59	4,654	79	4,517
South Australia	125	3,286	†	3,364	56	2,088	67	2,017	81	2,244
Western Australia	24	552	23	525	37	1,169	51	1,171	28	770
Tasmania	†	†	†	†	11	512	11	512	13	686
Commonwealth	...	‡21,598	...	‡29,520	582	30,605	880	54,027	1,083	69,679

* No. of holdings on which ensilage was made. † Figures not available. ‡ Exclusive of Tasmania.

Since the drought of 1902-3 greater attention has been paid to ensilage than was previously the case, and during the past five seasons a continuous and fairly rapid increase has been in evidence in all the States, both in the number of holdings on which ensilage was made, and in the quantity produced.

§ 20. Agricultural Colleges and Experimental Farms.

1. **Introduction.**—It has been thought preferable to refer to what may be called the effort in the direction of agricultural education in this section rather than under the heading of education.

The virgin soil of a new country rendered attention to scientific methods of farming less necessary in the earlier days of Australian colonisation than at the present time, and it may also be said that the knowledge of scientific farming was then but little developed. In many parts of Australia, moreover, the regular rotation of crops, of vast importance to all agricultural countries, would appear hardly possible owing to the peculiar climatic conditions. These conditions may, however, be utilised, or made less adverse by a more skilful tillage of the soil, and the restoring to it or adding to it such chemical constituents as may be necessary for particular crops. The fostering of industries, other than those pertaining merely to the production of cereals, is also becoming a matter of consequence, and considerable extensions of knowledge have been made in the past few years in respect to the co-ordination of other industries with agricultural industry. In most of the States agricultural colleges and experimental farms have been established with a view to promoting agriculture and of establishing improved and more scientific systems of stock-breeding and dairying. In these colleges and in some of the farms provision is made for the accommodation of pupils, to whom both practical and theoretical instruction is given by experts in various branches of agriculture. Analyses of soils and fertilisers are made, manures are tested, and elementary veterinary science, etc., is taught, while general experimental work is carried on with cereal and other crops, not merely for the purpose of shewing that it is practicable to produce certain crops in a given place, but also to shew how it is possible to make farming pay best in that locality. Opportunities are afforded for practice in general agricultural work, and instruction is given in the conservation of fodder, in cheese and butter making, in the management, breeding, and preparation for the market of live stock, in the eradication of pests and weeds, and in the carpenters', blacksmiths' and other trades.

Travelling expert lecturers are sent to the various agricultural and dairying centres, and there is a wide distribution of periodical agricultural gazettes and bulletins on matters of importance at special seasons. Lectures are given on agricultural, pastoral, horticultural, and viticultural subjects, according as they have bearing on the industries of the district in which they are given, and practical demonstrations are frequently held with a view of obtaining the best results. Seeds of cereals, potatoes, and fodder plants are distributed throughout the several States for experimental purposes, on the understanding that result reports will be furnished to the department from which the seed was sent. The object of this is to ascertain the varieties of seed best adapted to the soil in the different localities. Attention is also paid to the proper supervision of exports of produce in order to ensure their being placed on the home markets in the best possible condition. In some of the States agricultural instruction is given at technical schools, while experimental elementary agriculture—practically a form of nature study—is taught at many of the primary schools. Courses for the instruction of school-teachers during the holiday recesses have been established at some of the agricultural colleges.

(i.) *Australian Bureau of Agriculture.* In July, 1909, a Bill to establish a Bureau of Agriculture was introduced into the House of Representatives. Under this Bill it

was proposed that the Bureau be charged with any of the following functions:—(*a*) the acquisition and diffusion among the people of the Commonwealth of information connected with agriculture, dairying, horticulture, viticulture, live stock and forestry; (*b*) the collection, propagation and distribution of new and valuable seeds and plants; (*c*) the carrying out of experiments and investigations; (*d*) the investigation of pests or diseases affecting plants or live stock, and the means for preventing their spread or effecting their eradication; (*e*) the publication of reports of the experiments of experimental farms; (*f*) the publication of reports and bulletins dealing with any matter of importance in regard to production in Australia, and (*g*) such other functions as may be prescribed. It was also proposed that arrangements be made with the Government of any State in respect to the carrying out of experiments and investigations, the supply and distribution of information, the exchange and distribution of seeds and plants; and any matters conducing to the development in Australia of agricultural, pastoral, dairying, horticultural and viticultural industries and forestry. Each year a report was to be furnished to Parliament shewing the condition of the various industries and forestry in Australia and of the nature of the work done by the Bureau during the preceding year. This Bill, however, lapsed.

(ii.) *Particulars of Agricultural Colleges and Experimental Farms.* In the table given below particulars of agricultural colleges and experimental farms in the several States of the Commonwealth in 1909-10 are shewn. Tasmania is the only State in which such colleges or farms are not established:—

PARTICULARS OF AGRICULTURAL COLLEGES AND EXPERIMENTAL FARMS IN THE COMMONWEALTH, 1909-10.

Particulars.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	C'wealth
Number of colleges	1	2	1	1	...	5
Number of experimental farms ...	14	9	7	5	4	39
Total number of students ...	280	184	55	55	17	591
Total number of hands employed	136	113	57	51	16	373
Area under cereals and hay ... Acres	1,953	1,389	446	1,104	1,111	6,003
Area under fruit trees and vines... „	333	143	74	81	14	645
Area under all other crops ... „	1,132	410	352	345	117	2,356
Total area under crop ... ... „	3,418	1,942	872	1,530	1,242	9,004
Area of arable land ... ... „	4,808	3,859	1,387	2,993	3,559	16,606
Total area of farms ... ... „	14,644	9,323	13,177	7,889	7,005	52,038
Number of Live Stock—						
Horses ... ... No.	347	168	176	92	60	843
Cattle ... ... „	895	421	858	93	202	2,469
Sheep ... ... „	4,257	4,636	1,676	2,562	745	13,876
Pigs ... ... „	480	378	220	161	222	1,461
Value of plant and machinery ... £	9,926	8,962	5,450	2,766	2,200	29,304
Value of produce for year ... £	22,715	9,827	6,474	5,526	2,342	46,884

2. **New South Wales.**—In order to meet the demand for agricultural training, and for the purpose of conducting experiments in various branches of agriculture and of disseminating agricultural knowledge, an agricultural college and farm and fourteen experimental farms have been established by the New South Wales Government. Theoretical instruction in agriculture, with practical illustrations, forms part of the curriculum of the Sydney Technical College. At the Hurlstone Continuation College there is a special course in both theoretical and practical agriculture for teachers. Instruction in "nature knowledge" is given in the State primary schools, many of which have their own experimental plots. As a means of further encouraging the study of agriculture the Department of Public Instruction has a travelling inspector in agriculture, whose duty it is to visit the country and metropolitan schools, giving lectures on the value, necessity, and advantages of agricultural knowledge, and giving practical demonstrations wherever practicable.

(i.) *The Hawkesbury Agricultural College*, situated near the town of Richmond, on the Hawkesbury River, about thirty-eight miles from Sydney, is under the control of the Agricultural Department and provides accommodation for about 250 students. Attached to the college is a farm of 3551 acres, of which 1060 acres were under crop in the season 1909-10.

(*a*) *The course of instruction* comprises the principles of agriculture; the breeding, rearing, feeding, and management of live stock; agricultural chemistry, botany, vegetable pathology, and entomology; veterinary science and practice; bacteriology; meteorology; agricultural mechanics; elements of surveying and farm book-keeping; all kinds of practical farm work, including the use of farm implements and machinery; dairying, carpentry, saddlery, blacksmithing, and elementary agricultural engineering; the management of poultry and bees and all branches of orchard and garden work. The course extends over two years, and is divided into four sessions. At the end of the course students may undergo examination for the purpose of obtaining the college diploma.

(*b*) *Experimental Work.* In addition to the education of the students extensive experimental operations are carried on at the farm for the general benefit of agriculturists. Large numbers of farmers visit the institution in quest of information. During the winter vacation arrangements are made for a winter school for farmers. This school has been in operation for five years. The course extends over one month.

(ii.) *Experimental Farms, Orchards, and Vineyards.* Experimental farms have been established at Wagga, Bathurst, Coolabah, Grafton, Glen Innes, Cowra, Wollongbar, Dural, and Nyngan. There are irrigation farms at Moree, Pera, and Yanco, and a dairy stud farm at Berry, while viticultural stations have been established at Howlong and Raymond Terrace. At the farms at Wagga, Bathurst, Wollongbar, and Berry, accommodation is provided for students. The educational work undertaken at the four farms where students are received is more practical than academic. Scientific lectures are given as far as possible, and the students, at the end of the full course, undergo an examination for the purpose of obtaining the farm certificate. The fees payable are not large, amounting, as a rule, to about £25 per annum for residential students. With regard to the farm operations, the objects of each farm are to demonstrate the most economic and effective systems of producing and harvesting crops; to carry out experiments to determine the suitability or otherwise of crops, not only for the district where the farm is situated but for other districts having similar climate and soils; and to carry out scientific agricultural experiments generally.

(iii.) *Particulars of Agricultural College and Experimental Farms.* The following table shews the number of students at the Hawkesbury College and at the four experimental farms at which students are received for each year from 1905 to 1909 inclusive:—

NEW SOUTH WALES.—NUMBER OF STUDENTS AT GOVERNMENT AGRICULTURAL COLLEGE AND EXPERIMENTAL FARMS, 1905 to 1909.

Name.	1905.	1906.	1907.	1908.	1909.
Hawkesbury Agricultural College	144	201	230	190	188
Wagga Farm	41	40	63	52	49
Bathurst Farm	18	25	23	25	32
Wollongbar Farm...	14	9	18	7	11
Berry Dairy Stud Farm	11	7	11	2	...
Total	228	282	345	276	280

At the Wagga farm a specialty is made of growing seed wheats and fruits for drying, and of breeding dairy stock and swine. The Bathurst farm is devoted to the cross-breeding of sheep, fruit-growing, cereal culture, and general mixed farming. At Coolabah experiments in the dry districts have been carried on, while at Wollongbar experiments have been made on a large scale with grasses for the grazing of dairy cattle, and steps have been taken to assist the dairying industry in the surrounding districts.

The following table gives particulars of the Hawkesbury College and of fourteen experimental farms for the year ended the 31st March, 1910.

Coolabah and Moree farms were closed in May, 1910, the operations of the former being transferred to Nyngan.

NEW SOUTH WALES.—PARTICULARS OF GOVERNMENT AGRICULTURAL COLLEGE AND EXPERIMENTAL FARMS AT THE 31st MARCH, 1910.

Name of College or Farm.	Total Area of Farm.	Total Area under Crop.	Area under Cereals and Hay.	Area under Fruit Trees and Vines.	Area under all other Crops.	Number of Hands Employ'd	Value of Plant and Machinery.	Value of Produce for the Year.
	Acres.	Acres.	Acres.	Acres.	Acres.	No.	£	£
Hawkesbury	3,551	1,060	464	25	571	24	1,852	6,250
Wagga ...	3,228	993	763	95	135	17	2,099	6,953
Bathurst ...	610	409	196	37	176	12	1,745	3,420
Coolabah[1] ...	2,282	54	45	3	6	2	500	199
Moree[2] ...	80	46	34	3	9	4	120	269
Wollongbar	265	80	34	1	45	17	300	926
Berry[3] ...	323	75	40	...	35	5	330	485
Howlong[4] ...	224	44	10	34	...	7	200	174
Grafton ...	1,000	163	124	...	39	11	556	2,393
Glen Innes ...	1,050	114	61	24	29	9	500	455
Cowra ...	996	178	94	3	81	9	830	570
Pera[2] ...	67	60	20	34	6	3	300	240
Raym'd Ter.[4]	610	10	...	10	...	6	5	...
Yanco[2] ...	323	129	68	61	...	9	589	321
Dural ...	35	3	...	3	...	1	...	60

1. The total area of this farm is 15,000 acres, but 12,718 acres have been let for grazing purposes
2. Irrigation farm. 3. Dairy stud farm. 4. Viticultural station.

(iv.) *Other Forms of Agricultural Instruction.* Agricultural education at the Technical College at Sydney includes the following studies:—The character and prospects of Australian agriculture; climate and rainfall; selection of land, clearing, fencing, building and draining; irrigation and water storage; the cultivation of crops; manures; live stock; dairying; sheep and wool; farm and dairy chemistry; the treatment of fungus and insect pests; fruit-growing and preserving; vine-growing and wine-making; pigs, poultry and bee-keeping; and horticulture and home-gardening. Elementary agriculture forms the first year's course, and advanced agriculture is dealt with during the second year. With the object of giving lectures and demonstrations on various subjects, the scientific and expert staff of the agricultural laboratories in Sydney as well as those attached to the college and farm staffs are from time to time placed at the disposal of the farming community, and are constantly in demand by agricultural societies, farmers' and settlers' associations, and other similar bodies. The publication of the *Agricultural Gazette* is a valuable means of imparting knowledge on agricultural matters. Seeds grown at the experimental farms are distributed from a central depôt in Sydney for trial purposes among the farmers, and are also available to State school teachers for use in connection with the experimental plots, which are now attached to many of the primary schools throughout the State. The only condition in the granting of such samples is that the recipients shall in due course forward a report of their experiments to the Agricultural Department.

3. **Victoria.**—In 1884, the Agricultural Colleges Act, passed to make provision for the establishment of agricultural colleges and experimental farms in Victoria, provided for the permanent reservation from sale of 150,000 acres of Crown lands by way of endowment of agricultural colleges and experimental farms, which, together with other lands reserved as sites for such institutions prior to the passing of the Act, are vested in three trustees appointed by the Governor. Provision was made for the appointment of a Council of Agricultural Education, consisting of eleven members, five of whom are elected by the members of the Agricultural Societies of the State, five are nominated by the Governor, whilst the Secretary for Agriculture is also a member of the Council and its Treasurer. Two agricultural colleges and nine experimental farms, orchards and vineyards have now been established in different parts of the State. There are five Agricultural High Schools under the control of the Education Department, while elementary experimental agriculture is taught at many of the State primary schools. Instruction in agriculture is also given at the technical schools at Melbourne and Bairnsdale.

(i.) *Agricultural Colleges.* The two colleges are situated respectively (*a*) at Dookie, in the Goulburn Valley district, and (*b*) at Longerenong, in the Wimmera district.

(*a*) *The Dookie Agricultural College*, with its farm of 5118 acres, is situated in a rich agricultural country, eminently suited for farming, grazing, viticulture, and horticulture. The college buildings were erected during 1886, and since then numerous additions have been made, so that at the present time accommodation is provided for over 100 students, and provision will shortly be made to accommodate more. The farm is equipped with modern dairy and cowbyres, piggeries, poultry plant, cellars, etc., also large stables and stallion boxes, shearing shed, slaughterhouse, mechanics' and carpenters' shops, silos, barn, sheds, cattle and sheep yards, steam and oil engines, and numerous modern implements of agriculture. Half the students' time is devoted to practical work on the farm, and half to scientific, theoretical, and other work. On the farm the student is taught to manage live stock, handle implements and machinery, work the separator, drive engines, prune vines and trees, break-in horses, shoe horses, mend a break, and erect buildings. At the college instruction is given in determining the fertility of soils, the effects of manuring, the importance of drainage, the improvement of stock and crops, irrigation, and the treatment and eradication of diseases in plants and animals. Considerable attention is paid to experimental work in connection with cereals. The rearing of new varieties of wheat, suitable for the different parts of the State of Victoria, has special attention paid to it. Manurial tests are carried out each year and the results published for the benefit of the farmers. The stock comprise over eighty horses, as well as good herds and flocks of pedigreed cattle, sheep, pigs, and poultry. The annual charge made to residential students is £28 per head. The number of students during 1909 was 108.

(*b*) *The Longerenong Agricultural College*, reopened in 1905, can accommodate forty students, and thirty-five were on the rolls during last year. The farm contains an area of 2386 acres, and is particularly adapted for demonstrating what can be done in farming with irrigation, water being supplied by one of the channels of the Western Wimmera Irrigation Trust. Including fallow land, about 800 acres are under cultivation each season; the orchard and vineyard cover an area of about thirty acres. In addition to a number of well-bred horses and cattle, there is a small flock of pedigree sheep. Lamb-raising is one of the principal industries. The course may be taken by either resident or non-resident students, the former doing both class and farm work, while the latter attend for class work only on alternate days. The syllabus of instruction includes the principles and practice of agriculture, agricultural chemistry, agricultural physics and mechanics,

botany, entomology, geology, surveying, bookkeeping, mathematics, and English. The fees for resident students amount to £18 5s. per annum, and for non-resident students to £5 per annum.

(ii.) *Agricultural High Schools and Technical Colleges.* At the end of the year 1910 there were in operation, five agricultural high schools controlled by the Education Department, viz., Warrnambool, Sale, Shepparton, Wangaratta, and Ballarat. Similar institutions are to be established in the near future at Mildura and Leongatha, the sites having already been acquired, the direct aims being to give to boys such an education as will direct their attention specially towards the land as a means of gaining a livelihood; to promote agriculture as an occupation and a profession; to provide a central institution for the dissemination of agricultural information by evening lectures, conferences, and literature; to superintend the Government experimental plots; to record and interpret their results; and to provide a summer school in agriculture for primary school teachers. The course of instruction comprises agricultural science, climatology, physics, chemistry, geography, drawing, English, mathematics, and farm practice. At the Working Men's College at Melbourne lectures are given on agricultural chemistry, wool-classing, poultry-breeding, etc., and at the School of Mines at Bairnsdale a complete course in theoretical and practical agriculture is given, extending over a period of two years. Agricultural courses are also held at the Ballarat School of Mines and at the Gordon College, Geelong.

(iii.) *Experimental Farms.* Experimental farms have been established at Rutherglen, Whitfield, Wyuna, Heytesbury, Burnley, Mount Xavier (Ballarat), Moe, Rosedale, and Marlo (Gippsland), demonstrating different methods of cultivation, manuring, stock-breeding, the cultivation of economic plants, the improvement of varieties of cereals by selection and cross fertilisation, and the testing of fodder plants. Six demonstration orchards have been established to shew the effect of proper cultivation and pruning of fruit trees in various districts and the suitability of the trees for the district. At Burnley Horticultural Gardens students are trained in horticulture. Areas have been planted at Rutherglen and Wahgunyah with phylloxera-resistant vines for distribution to vignerons to enable them to reconstitute their vineyards. In several districts experimental plots are conducted by the local agricultural society.

(iv.) *Other Forms of Agricultural Instruction.* The *Journal of the Department of Agriculture*, published monthly, deals with various matters relating to agriculture, and is a valuable means of disseminating information. Since the establishment of butter factories throughout Victoria a travelling dairy formerly utilised has been discontinued. Demonstrations in cheese-making are, however, still given by an expert, while other experts also visit the factories and supply information and instruction. Practical lessons are also given by experts in fruit-preserving, drying, and candying, also in flax manufacture, cider-making, poultry-dressing, and the preparation of poultry for export. In addition to these lectures a system of short course classes in agriculture has been established. These classes are held at various centres, and lectures are given on the principles of agriculture, the care of farm stock, sheep-breeding and management, dairy-farming, agricultural engineering, and orchard and garden work. In many of the State schools of Victoria elementary agriculture is taught. In connection with these schools there are experimental plots varying in area from half an acre to rather less than a quarter of an acre. Experiments are conducted to shew the benefits of cultivation, drainage, and rotation of crops, to ascertain fodder and other crops suitable for the locality, and to test manures. In some of the schools milk-testing is taught, and the economic native woods, common weeds, and insects are dealt with. Agricultural societies have been formed in many country towns. They arrange lectures, competitions, and form experimental plots, etc., and receive subsidies from the State for such purposes. There is a course of agriculture at the Melbourne University by which students can attain the degrees of the Diploma of Agriculture, and Bachelor of Agricultural science.

(v.) *Particulars of Agricultural Colleges and Experimental Farms.* The table given hereunder furnishes particulars relating to the agricultural colleges of Dookie and Longerenong, and the nine experimental farms :—

VICTORIA.—PARTICULARS OF GOVERNMENT AGRICULTURAL COLLEGES AND EXPERIMENTAL FARMS FOR THE YEAR 1909-10.

Name of College or Farm.	Total Area of Farm.	Total Area under Crop.	Area under Cereals and Hay.	Area under Fruit Trees & Vines.	Area under all other Crops.	Number of Hands Employed.	Value of Plant and Machinery.	Value of Produce for the Year.
	Acres.	Acres.	Acres.	Acres.	Acres.	No.	£	£
Dookie ...	5,118	912	731	70	111	44	4,500	5,700
Longerenong	2,386	439	381	27	31	14	1,100	2,216
Rutherglen	913	183	110	29	44	25	1,000	1,575
Whitfield ...	113	70	35	2	33	3	300	216
Wyuna ...	540	228	95	1	132	12	1,622	...
Heytesbury	33	27	10	...	17	2	80	...
Burnley ...	34	22	7	14	1	6	250	70
Mt. Xavier...	111	59	20	...	39	...	...	50
Moe ...	20	...	...	...	...	4	20	...
Rosedale ...	20	1	...	...	1	2	30	...
Marlo ...	35	1	...	...	1	1	60	...

4. **Queensland.**—Organised experimental agriculture in Queensland dates from the establishment of the Department of Agriculture and Stock, but such work as has been done in connection with stock-breeding, other than that carried on by private individuals, has been of later birth, and has been confined to dairy stock and draught horses. Agriculture in Queensland in the early nineties was upon the well-defined lines of the other States, so that the knowledge to be gained as to what could be profitably adapted to Queensland, with its varied climate and rainfall, covered a wide field. Instructors were appointed conversant with the different lines of agriculture, of which grain cultivation, dairying, fruit-growing, tobacco cultivation, and tropical agriculture, such as sugar, rubber, and spices, are the most important. This has been followed by the establishment of an agricultural college, of farms in the temperate parts of the State, and of nurseries in the tropical parts. With wheaten grain a system of experiments has been carried out for some years with the distinctive object of evolving a type of wheat adapted for Queensland, and as far as possible resistant to the attacks of rust. In dairying, a commencement was made by despatching to the different farming centres properly equipped travelling dairies with the latest appliances. The export of Queensland dairy produce has arisen through this effort. No travelling dairies are, however, now employed. A fruit farm has been established, at which fruits suitable for or likely to adapt themselves to the Queensland climate and conditions have been experimented with during a series of years. To cope with the insect and fungus pests to which such fruits are peculiarly susceptible, careful inspection is made of fruits in the markets and for export, and every effort is put forth to prevent the introduction of fresh diseases and to exterminate those which are already within the State.

(i.) *Gatton Agricultural College.* In 1897 the Queensland Government established an agricultural college at Gatton, about fifty-eight miles west of Brisbane, with an associated farm of 1692 acres. Accommodation is provided for sixty residential students. Instruction is afforded in various branches of practical farming and theoretical agriculture, the practical feature being regarded as the more important. Elementary science and physics, dairying, gardening, elementary chemistry, veterinary science, horticulture, stock-breeding, elementary bacteriology, and agricultural chemistry are also taught. A dairy herd of the best known and favoured breeds has been established at the college, whence the young stock of pure breed have been distributed throughout the State. A

course for the instruction of school teachers during the summer recess has been established at the college by the Education Department, and the knowledge thus acquired is imparted by the teachers, not only to the school children, but also to the farmers and dairymen. On the 31st December, 1909, there were forty students on the books of the college.

(ii.) *Experimental Farms and Technical Colleges.*

(*a*) *Experimental Farms* are carried on by the Government at Westbrook (near Toowoomba), Gindie, Biggenden, Hermitage (near Warwick), Warren, and Roma. At the Hermitage farm arrangements were made during the year 1906, whereby instruction in general farm work is given to a number of boys who, from circumstances, are unable to receive the advantages of the college course, and this system has now been applied to the farm at Biggenden. The pupils are apprenticed for a term of three years and are instructed in experimental and acclimatisation work, stock-breeding, hybridising, orchard work, etc. These youths are paid nothing for the first twelve months, £12 for the second, and £24 for the third. A state nursery has been established at Kamerunga, near Cairns, and a sugar experimental station at Mackay, but the State tobacco farm at Texas was relinquished during 1906.

(*b*) *Technical Colleges.* At the technical colleges established in various parts of the State instruction is given in certain agricultural subjects. Thus, at Brisbane, Ipswich, and Maryborough, botany, milk and cream testing, fruit preserving and pickling are dealt with, and at Brisbane wool-classing also. At Bundaberg, Gympie, Rockhampton, South Brisbane, and Toowoomba milk and cream testing is taught, whilst instruction is given in dairy-farming at Warwick.

(iii.) *Other Forms of Agricultural Instruction.* Free lectures are from time to time given at different centres by the Agricultural Department's technical instructors on all agricultural, horticultural, and pastoral subjects. A monthly *Agricultural Journal* is issued, in addition to pamphlets on special subjects. Seeds which are new to the country are distributed free. In the primary schools instruction is given in nature study and in economic gardening, prizes being awarded both for practical and theoretical work.

(iv.) *Particulars of Agricultural College and Experimental Farms.* The table given below contains particulars of the Gatton Agricultural College and the seven experimental farms. Figures relating to the technical colleges are not available:—

QUEENSLAND.—PARTICULARS OF GOVERNMENT AGRICULTURAL COLLEGE AND EXPERIMENTAL FARMS FOR THE YEAR 1909.

Name of College or Farm.	Total Area of Farm.	Total Area under Crop.	Area under Cereals and Hay.	Area under Fruit Trees and Vines.	Area under all other Crops.	Number of Hands Employ'd	Value of Plant and Machinery.	Value of Produce for the Year.
	Acres.	Acres.	Acres.	Acres	Acres.	No.	£	£
Gatton ...	1,692	314	162	6	146	28	2,000	3,800
Biggenden ...	211	22	6	3	13	1	300	150
Roma ...	790	116	70	13	33	6	600	320
Gindie ...	8,611	51	26	4	21	3	600	630
Westbrook ...	280	73	30	32	11	4	400	350
Warren ...	1,128	50	28	5	17	5	600	374
Kamerunga	32	22	...	3	19	6	200	150
Hermitage ...	433	224	124	8	92	4	750	700

5. **South Australia.**—To this State belongs the honour of starting the first experimental farm in the Commonwealth. As far back as the year 1879 a resolution was passed by the local Parliament in favour of the establishment of a School of Agriculture, with an experimental farm, under the charge of a professor of agriculture. Active operations in this connection were commenced in 1882, when the first series of plots of wheat were sown at Roseworthy. Experimental work, chiefly directed towards improving the wheat yield, has been developed along three main lines, viz.: (*a*) The improvement of varieties of wheat, (*b*) the improvement of methods of cultivation, and (*c*) the use of manures. The Central Agricultural Bureau, established at Adelaide under the control of an Advisory Board, has an extensive membership distributed throughout the agricultural districts of the State. It assists farmers by the dissemination of knowledge; by helping to introduce new economic plants; by improving the breed of stock; and it acts as a means of keeping the Agricultural Department in touch with the producers. The branches of the bureau hold meetings at regular intervals in their several districts, ideas and methods as regards practical subjects are interchanged, and discussions are held on matters of general interest to agriculturists.

(i.) *The Roseworthy Agricultural College.* The Roseworthy College, situated seven miles from Gawler, and affording accommodation for about fifty resident pupils—who must be at least sixteen years of age on admission—has two main objects, viz.: (*a*) To train young men for the practice of agriculture, horticulture, and viticulture, and (*b*) to conduct experiments with a view to the advancement of the rural industries in South Australia. The attached farm is 1890 acres in extent. The course extends over a period of three years, the fees for residential students being £30 per annum. The curriculum includes both scientific and technical subjects, viz., chemistry, physics, anatomy, physiology, botany, and entomology; agriculture, viticulture, œnology, fruit culture, veterinary science, dairying, book-keeping, surveying, wool-classing, and general rural economy. Fifty-two students were on the roll during 1909.

(ii.) *Experimental Farms.* During the year 1905-6 three experimental farms were handed over to the Agricultural Department, namely, the homestead block at Kybybolite of 1040 (now 2256) acres, 59 acres of reclaimed swamp at Murray Bridge, and 84 acres at Parafield. A similar farm which has recently been established at Loxton, is carried on in conjunction with one at Veitch's Well. On these, experiments are carried on with regard to the growing of different varieties of wheat, oats, and barley, both for grain and for hay crops, and also with regard to the growing of root and fodder crops. Investigations cover the manuring of crops, different methods of cultivation, rotation of crops, irrigation, the hybridisation and selection of cereals, feeding of animals, fruit-growing, and wine-making.

(iii.) *Government Dairy Farm.* Towards the close of 1908 the Government acquired a property of 1600 acres of good agricultural land at Turretfield, nine miles from Gawler, with the object of converting it into a model dairy farm. About 500 acres were cultivated during 1909, the produce of which is to be set aside mainly for ensilage purposes. Special provision has been made for the conservation of fodder, and large silos have been erected for the storage of the green feed. There were about sixty cows in milk during the latter part of 1909, particular care being taken to obtain the best strains for milking purposes. A feature of the farm is its piggery, and baconers are sent to the Adelaide market with advantageous results. Cheese and pasteurised cream are also marketed profitably.

(iv.) *Other Forms of Agricultural Instruction.* Lectures are given by the experts of the Agricultural Department under arrangement with the School of Mines at Adelaide and at country branches of that institution, while practical demonstrations are also given by the horticultural instructor. No instruction is given by travelling dairies, but the dairy instructor visits districts as arranged and gives instruction and advice on all matters pertaining to dairying. Lectures and practical demonstrations are given by experts all

over the State, principally under the auspices of the Agricultural Bureau or local committees. Though no systematic scheme for agricultural teaching in the primary schools exists, numbers of individual teachers have taken up experimental elementary agriculture —practically a form of nature study—with satisfactory results. Seed of special varieties of wheat is from time to time distributed gratis to applicants; also seed of barley and oats, and of fodder plants of a special character, likely to suit prevailing conditions. The *Journal of the Department of Agriculture* is issued monthly and special bulletins and pamphlets regarding cultivation, manuring, diseases of stock, etc., are published from time to time. It is proposed to establish a training school of agriculture in the near future.

(v.) *Particulars of Agricultural College and Experimental Farms.* The subjoined table gives details of the several farms in the State during 1909-10 :—

SOUTH AUSTRALIA.—PARTICULARS OF AGRICULTURAL COLLEGE AND EXPERIMENTAL FARMS FOR THE YEAR 1909-10.

Name of College or Farm.	Total Area of Farm.	Total Area under Crop.	Area under Cereals and Hay.	Area under Fruit Trees and Vines.	Area under all other Crops.	No. of Hands Employ'd	Value of Plant and Machinery.	Value of Produce for the Year.
	Acres.	Acres.	Acres	Acres.	Acres.	No.	£	£
Roseworthy	1,890	719	572	68	79	10	1,217	3,480
Kybybolite...	2,256	514	261	13	240	34	600	861
MurrayBridge	59	35	13	...	22	2	142	330
Parafield ...	84	30	26	...	4	2	357	375
Loxton and Veitch's Well	3,600	232	232	...	...	3	450	480

* Information not available.

6. **Western Australia.**— A considerable amount of developmental work has been done of late years towards the promulgation of agricultural knowledge on the three State farms at Chapman, Narrogin, and Hamel, and, more recently still, on the experimental farms at Brunswick and Nangeenan.

(i.) *The Chapman Farm* stands in the centre of a vast stretch of country lying twenty-five miles north of Geraldton and fifteen miles east of Northampton. Until a few years ago the expanse of land referred to was almost exclusively devoted to grazing, and it was mainly to prove its capabilities, and thus promote settlement, that the farm was established. The whole of the available land has since been selected, and settlement has outrun the extent of the area in question. Collaterally the object of the farm has been extended; it has become the medium whereby practical instruction in farming is provided for intending settlers in quest of a training which will fit them for their work. The farm, which has an area of 1280 acres, is well watered by the Chapman River and by wells served by windmills; it is securely fenced and subdivided. Stud stock are kept and bred, the young stock being sold annually. The stock consists of a stud of Suffolk Punch horses, a herd of Dexter Kerries, a flock of pure-bred Shropshire ewes and rams, Angora goats, and various kinds of poultry.

(ii.) *The Narrogin Farm.* The initial object of this farm was to practically demonstrate the larger return consequent upon improved cultivation of the land; to raise stud stock for the benefit of the farmers, to raise clean seeds for sowing their land, and to offer a field for training farmers' sons and others wishing to settle on the land. Students are admitted at an annual fee of £10; they are taught the practical farm work, such as handling live stock, and the use of various farm implements. Lectures are given at intervals by the scientific staff attached to the Agricultural Department. Experimental work is a merely subsidiary feature. The total area is 2826 acres. During the year 1909 there were sixteen students on the rolls.

(iii.) *The Hamel State Farm.* This farm, which formerly carried out experimental work consisting chiefly of testing new varieties of grasses and fodder plants, cereals, fruits and tubers, was closed in September, 1909.

(iv.) *Other Forms of Agricultural Instruction.* The Government dairy expert is continually travelling and lecturing on dairying, and lectures are also given by the field-officer, the horticultural and viticultural experts, and others. Demonstrations are also given in the cultivation of vines and fruit trees, including budding, grafting, and pruning. A regular monthly journal and bulletins at frequent intervals on matters of importance are issued by the Agricultural Department. The distribution of seeds and plants is now practically confined to seeds of fodder plants. While there are no specific regulations, recipients are asked, with a view to collating information as to the most suitable varieties in different localities, to report results. Experimental plots are conducted at some of the State schools under the direction of the teachers. A special feature of the entomological work carried out by the Department of Agriculture is the collection, breeding and distribution of parasites on insect pests. This work has been carried out with excellent results, several pests which were formerly a great source of trouble and expense being now practically non-existent. Experimental farms have been established at Brunswick, Nangeenan and Chapman.

(v.) *Particulars of State and Experimental Farms.* Particulars of the farms at Narrogin, Chapman, Brunswick, and Nangeenan for the year 1909 are given hereunder:—

WESTERN AUSTRALIA.—PARTICULARS OF STATE AND EXPERIMENTAL FARMS FOR THE YEAR 1909.

Name of Farm.	Total Area of Farm.	Total Area under Crop.	Area under Cereals and Hay.	Area under Fruit Trees and Vines.	Area under all other Crops.	Number of Hands Employed	Value of Plant and Machinery.	Value of Produce for Year.
	Acres.	Acres.	Acres.	Acres.	Acres.	No.	£	£
Narrogin ...	2,826	420	347	13	60	4	600	*
Chapman ...	1,280	320	300	...	20	3	800	1,142
Brunswick ...	811	178	140	1	37	6	*	*
Nangeenan...	2,088	324	324	...	...	3	800	1200

* Figures not available.

7. **Tasmania.**—In Tasmania there is a Council of Agriculture consisting of eleven members, whose duties are to collect and publish information of every kind calculated to prove beneficial to agriculturists, such as suitableness of various districts for growth or production of animal and vegetable products, information respecting plants, methods of cultivation, of breeding and feeding animals, and how best to improve the same: to prevent as far as possible the introduction and spread of diseases and pests, and to publish bulletins, abstracts, and reports containing all such information as may be desirable. Other matters embrace the employment of experts in any branch of agricultural science, distribution of plants and seeds for experiment, and the establishment of local boards of agriculture in different parts of the State. Lectures are given by the experts from time to time, and useful information and knowledge is diffused by means of the monthly gazette published by the Council, and also by means of special bulletins. There are no agricultural colleges or experimental farms, and practically no agricultural teaching is given in the elementary schools.

§ 21. Government Loans to Farmers.

1. **Introduction.**—All the Australian States have established systems under which financial aid is rendered to agriculturists by the Government. The principle upon which such aid is founded was probably first practically applied in Germany, viz., in the year 1770, when the *Landschaften Bank* was created. The establishment of the *Crédit Foncier* nearly a century later in France was a creation of a similar character. This latter institution was designed to enable house and land owners to raise money on mortgage at a low rate of interest, with facility for repayment by an annuity including redemption of the capital. It dates from 1852, but the mortgage bank known as the *Caisse Hypothécaire*, which, after a struggling existence, was finally liquidated in 1846, was based essentially on the same principle. Over the operations of the *Crédit Foncier*, created under governmental patronage and invested with such special privileges as to virtually constitute it a monopoly, the Government exercised a direct control, viz., by appointing its governor and its two deputy-governors. The *Crédit Foncier* was empowered to lend money only on a first mortgage, and to the amount of one-half of the estimated value of houses and farms, and one-third that of vineyards, woods, and other plantations, and the commission charged could not exceed six-tenths per cent. The system developed and adopted in the Commonwealth, with the object of assisting farmers to make improvements or to develop or utilise the agricultural or pastoral resources of the land, is analogous. Particulars of advances made under the Closer Settlement and similar Acts are dealt with in the section on Closer Settlement. (See page 294.)

2. **Particulars of Transactions in each State, 1907 to 1910.**—The subjoined table gives particulars of transactions in each State in which advances to farmers are made, for the years 1907 to 1910 inclusive. Tasmanian figures are not available :—

STATE GOVERNMENT ADVANCES DEPARTMENTS.—PARTICULARS OF LOANS TO FARMERS, 1907 to 1910.*

State.	Total Advanced to Date.				Balance Due.			
	1907.	1908.	1909.	1910.	1907.	1908.	1909.	1910.
	£	£	£	£	£	£	£	£
New South Wales	683,308	789,333	1,062,625	1,362,853	401,741	423,511	591,292‡	795,113‡
Victoria	2,111,308	2,254,488	2,492,698	2,657,713	1,225,805	1,202,785	1,293,404‡	1,308,425‡
Queensland ...	129,361	153,228	187,014	235,793	112,216	119,344	136,946	163,640
South Australia§ ...	1,109,362	1,233,264	1,386,153	1,544,946	613,730	631,413	668,535	710,316
Western Australia	525,177	743,598	1,004,675	1,257,082	420,534	610,202	835,239	935,960
Commonwealth ...	4,558,516	5,173,911	6,133,165	7,058,387	2,774,026	2,987,255	3,525,416	3,913,454
	Annual Profits.				Accumulated Profits.			
	£	£	£	£	£	£	£	£
New South Wales	†	†	4,661	5,390	†	†	6,583	8,039
Victoria	6,430	6,751	7,037	5,926	62,198	68,949	75,987	81,913
Queensland ...	1,051	1,326	1,405	1,974	1,297	2,623	4,028	6,003
South Australia§ ...	3,598	3,797	4,218	4,587	25,582	29,380	33,598	38,186
Western Australia	3,988	4,637	6,061	6,823	13,557	18,194	24,255	31,078
Commonwealth ...	15,067	16,511	23,382	24,700	102,634	119,146	144,451	165,219

* Compiled from figures furnished by the Government Savings Bank of Victoria. † Returns ot available. ‡ Balance after deduction of special principal payments in advances. § Includes loans to farmers and other producers and to local bodies on the security of their own rates.

3. **New South Wales.**—(i.) *Initial Legislation.* New South Wales adopted the principle of advances to settlers on 4th April, 1899, when the Advances to Settlers Act received assent. The objects of this Act were to authorise the raising of a loan for making temporary advances to settlers; to provide for the making and repayment of such advances; and for purposes incidental to, or consequent on, those objects. In order to provide the funds necessary for the carrying out of this Act, the Colonial Treasurer was authorised to sell inscribed stock, secured upon the Consolidated Revenue, to an amount not exceeding £500,000, to be sold in amounts of £10 or some multiple of £10, and bearing interest at the rate of 3½ per cent. per annum, payable half-yearly. A board, consisting of not more than three members appointed by the Governor, called the Advances to Settlers Board, was appointed to deal with applications for loans and to decide whether they should be granted. The maximum amount that was authorised to be advanced to any one person was £200, and was to be repaid in full, together with interest at the rate of 4 per cent., within ten years of the making of the loan, but on no account was a loan to be granted except on the recommendation of the Board and when the security given was deemed satisfactory. An Amendment Act was passed in 1902, by which the advance limit of £200 was increased to £500, and the period within which repayments were to be made was extended to thirty-one years. In the latter part of the same year a further Amendment Act came into force. Under the provisions of this Act, the amount of inscribed stock was increased to £1,000,000, and the maximum amount of advance to any person was raised to £1500, interest on the latter being payable at the rate of not less than 4 per cent. per annum.

(ii.) *Legislation now in Force.* The above Acts were all repealed by the Government Savings Bank Act of 1906, which received assent on 21st December of that year. All property held by the Advances to Settlers Board was to be vested in three Commissioners appointed under this Act, who were styled "The Commissioners of the Government Savings Bank of New South Wales." An Advances Department of the Savings Bank was constituted, and debentures to the amount of £305,000 (that being the amount of stock issued under the Advances to Settlers Acts and held at the beginning of this Act) were issued, an equivalent amount of Government stock transferred to the Savings Bank Department being, at the same time, cancelled. All moneys, securities, documents, property, etc., held by or on behalf of the Advances to Settlers Board were transferred to, and became vested in, the Commissioners, and were carried to the accounts of the Advances Department of the Savings Bank.

(iii.) *Security on which, and Objects for which, Advances are made.* The Commissioners are authorised to issue debentures to the amount of £2,000,000, bearing interest at a rate not exceeding 4 per cent. per annum. They may lend moneys from the Advances Department (*a*) upon mortgage of an estate of inheritance in fee simple in any land in the State; (*b*) upon mortgage of conditional purchases with or without associated conditional leases, homestead grants or selections, settlement leases or purchases, or conditional purchase leases; and (*c*) on deposit at call or short notice in the Treasury on any bank of issue in the State, or on deposit in the Savings Bank Department. Loans may be made for any of the following purposes:—(*a*) To pay off existing encumbrances or to purchase the land; (*b*) to pay off money to the Crown in respect of the land; (*c*) to make improvements or to develop the agricultural or horticultural resources of the land; and (*d*) to build homes on the land.

(iv.) *Amount and Repayment of Advances.* No loan to any one person may amount to less than £50 or more than £2000, and applications for loans not exceeding £500 have priority over those of a larger amount. In no case does the amount of the advance exceed 80 per cent. of the Commissioners' valuation of the security. Advances may be made up to two-thirds of the value of the interest of the borrower in the land, buildings and improvements, except where the land is held as a conditional lease, homestead grant, settlement lease, homestead selection, settlement purchase, or conditional purchase as to which the first five years' certificate has not issued, in which cases the amount advanced

may not exceed one-half of the holder's interest in the improvements. Loans are made only in respect of first mortgages, and except in the case of loans on the security of freeholds or certificated conditional purchases, are repayable by equal half-yearly instalments within such period, not exceeding thirty-one years, as the Commissioners think fit. Loans granted on the security of freeholds and certificated conditional purchases are repayable either in the same manner as loans on other securities just mentioned, or at the expiration of a fixed term not exceeding five years, during which period interest only is payable.

(v.) *Advances on Purchases of Farms.* To facilitate close settlement on private estates suitable for the purpose, the Commissioners are authorised to make advances in order to assist persons in purchasing land. In the case of such advances the title to the land must be either freehold or a certificated conditional purchase, and the amount advanced may not exceed 80 per cent. of the Commissioners' valuation.

(vi.) *Particulars of Advances to Farmers, 1905 to 1909.* The following table shews particulars of the advances made up to the 30th June in the years 1905 and 1906, and to the 31st December in 1907, 1908, and 1909:—

PARTICULARS OF GOVERNMENT ADVANCES TO FARMERS IN NEW SOUTH WALES, 1905 TO 1909.

Particulars.	1905.*	1906.†	1907.*	1908.*	1909.*
Total applications received No.	10,431	11,188	12,397	13,796	15,497
Total amount applied for ... £	1,581,581	1,718,431	2,166,901	2,794,898	3,583,748
Total applications refused or withdrawn ... No.	4,785	5,010	5,541	5,632	6,256
Total applications approved No.	5,646	6,178	6,856	8,164	9,241
Total amount advanced ... £	563,596	647,624	789,334	1,062,626	1,362,854
Av. amount advanced per loan £	100	105	115	130	147
Repayments of principal ... £	157,191	236,415	365,823	470,548	566,102

* Year ended 30th June. † Year ended 31st December.

4. **Victoria.**—(i.) *Legislation.* The Advances Department of the Government Savings Bank of Victoria was established by the Savings Bank Act of 1896, amended in 1901 and again in 1903. The funds for the purpose of making advances are raised by the issue of mortgage bonds, the total amount of which is limited to £3,000,000.

(ii.) *Security on which Advances Granted.* In order to assist farmers, graziers, market gardeners, or other persons employed in agricultural, horticultural, viticultural, or pastoral pursuits, the Savings Bank Commissioners are empowered to make advances, either by instalments or otherwise, upon the security of any lands held by such person either (*a*) in fee simple, or (*b*) under a Crown lease in which the rent received is taken by the Crown in part payment of the lands demised. Security must be, in every case, a first mortgage. A loan may be either in cash or in mortgage bonds at par face value at the option of the Commissioners.

(iii.) *Amount of Advances.* The limits of the advances are £50 and £2000, as in New South Wales, applications for advances under £500 having also similar priority. In the case of land held in fee simple or under lease as specified in (*b*) above, the amount of the advance which may be made must not exceed two-thirds of the actual value of such land at the time of advance, which is reduced by the amount of all rent payable in respect of the land, previous to the issue of a Crown grant for such. If the person appointed by the Commissioners as valuator of any land certify that the improvements effected thereon increase the productive power of the land and exceed £2 per acre, the Commissioners may make, notwithstanding anything contained above, an advance of fifteen shillings for every acre so improved.

(iv.) *Special Provision for Vineyards, Orchards, etc.* In the case of land which has acquired a special value by reason of being cultivated as vineyards, hop-grounds, orchards, fruit-growing plantations, etc., advances may be made on the following terms:—(*a*) The total amount which may be at any time advanced upon any such land may not be more than £100,000 in the whole. (*b*) The amount of two-thirds of the actual value referred to above may be increased by one-quarter of any special increase in value, but such increase is in no case to be considered as greater than £30 an acre. (*c*) No advance may be for a longer period than fifteen years.

(v.) *Purposes for which Advances Granted.* Advances are made for the following purposes only:—(*a*) To pay off existing liabilities; (*b*) to pay off money owing to the Crown in respect of the land; (*c*) to make improvements or to improve and develop the agricultural, horticultural, viticultural, or pastoral resources of the land.

(vi.) *Repayment of Advances.* The rate of interest charged on loans, originally fixed at 4½ per cent. per annum, may, by the Amendment Act of 1903, be altered by the Commissioners with the approval of the Governor-in-Council, up to but not beyond 5 per cent. per annum. All advances, together with interest, must be repaid by sixty-three half-yearly instalments, or such smaller number as may be agreed upon between the borrower and the Commissioners.

(vii.) *Particulars of Advances to Farmers, 1905 to 1910.* The following table gives particulars as to the loans raised and repaid by the Advances Department, the number and amount of applications received and granted, and the amounts advanced and repaid for each financial year from 1905-6 to 1909-10 inclusive:—

LOANS TO FARMERS.—TRANSACTIONS OF ADVANCES DEPARTMENT OF GOVERNMENT SAVINGS BANK, VICTORIA, DURING EACH FINANCIAL YEAR, 1905 to 1910.

Particulars.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.	Total to the 30th June, 1910.
Bonds & debentures issued £	100,000	100,000	100,000	100,000	200,000	2,783,600
,, ,, redeemed £	79,675	104,675	79,500	30,000	125,025	1,128,775
Applications received No.	788	550	704	825	669	12,503
,, ,, Amount, £	319,650	217,572	344,703	468,085	319,060	6,023,035
Applications granted No.	371	295	390	502	416	6,770
,, ,, Amount, £	143,515	98,840	162,615	250,895	177,765	*2,906,515
Amounts advanced ... £	131,034	89,975	143,180	238,210	165,015	2,657,713
,, repaid ... £	152,626	189,547	168,800	151,437	153,355	1,333,849

* Of this amount £2,657,713 has been actually paid over to borrowers, a further sum of £25,770 being in course of settlement; the balance represents applications withdrawn or lapsed, or amounts offered but not accepted.

The number of loans at the 30th June, 1910, was 3131, and the average balance of each loan was £422 16s. 6d. The falling-off in the number of applications and amount of advances during the year 1906-7 was due, no doubt, partly to the fact that farmers had been favoured with good seasons during several years past, and partly also to the gradual fall in the rates charged for loans by other lenders. The number of repayments by farmers which became due during the year 1909-10 was 7051, representing amounts of £59,247 for interest and £29,006 for principal. These instalments have been well met, and on 30th June, 1910, there were only ten farmers in arrear, the amount of principal in arrear amounting to £42, and of interest to £59.

(viii.) *Seed Advances Acts.* In 1896 and 1903, Acts were passed to enable seed and fodder to be advanced on certain terms to cultivators of land. These measures applied only to the season in which they were passed. Under the first-mentioned Act the Treasurer was authorised to pay out of the Consolidated Revenue a sum not exceeding £15,000, but no cultivator was to receive such quantity of seed as would sow more than

100 acres, and he had to give a preferable lien over the produce of all crop harvested within twelve months. By the Act of 1903 the amount authorised to be lent was £100,000, in sums not exceeding value of £65 where granted on the security of a mortgage or license lien, or £40 where granted on the security of a preferable lien on crops. The borrower was required to give, as security, a mortgage over his farm or a license lien over the improvements thereon, and also, if required, a preferable lien on crops somewhat similar to that laid down in the previous Act. In 1904 an Act was passed to enable seed and manure to be advanced on certain terms to cultivators of land within the area controlled by the Carrum Irrigation and Water Supply Trust.

5. **Queensland.**—(i.) *Legislation.* The Queensland Government was authorised, under the Agricultural Bank Act of 1901, to establish a bank for the purpose of promoting the occupation, cultivation, and improvement of the agricultural lands of the State, and a body of three trustees was appointed to administer the Act. The Government was empowered to raise a sum not exceeding £250,000 by the issue of debentures, bearing interest at a rate of not more than 4 per cent. The original Act was amended in 1904 and again in 1905, the latter amendment specifying that no advance be made to any alien.

(ii.) *Security on which and Purposes for which Advances are made.* Advances may be made to owners of agricultural lands or to occupiers of Crown lands held either as agricultural farms or homesteads, grazing farms or homesteads, unconditional selections, or miners' homestead leases, and may be for any of the following purposes:—(*a*) The payment of existing liabilities; (*b*) agricultural, dairying, horticultural, or viticultural pursuits on the holding; (*c*) making improvements or adding to improvements already made; (*d*) the purchase of stock, machinery, or implements. Advances are only made on the security of first mortgages.

(iii.) *Amount and Repayment of Advances.* No advance may exceed ten shillings in the pound of the fair estimated value of the holding in the cases of (*a*) and (*b*) above, while in the other cases the limit of the amount of the advance is twelve shillings in the pound of such value, and the advance at any time must not exceed £800. Applications for amounts not larger than £200 have priority over those for a larger amount. During the first five years following the date of the loan the borrower must pay interest at the rate of 5 per cent. per annum. After the expiration of that period the loan, together with the interest, must be repaid by half-yearly instalments within twenty years, the amount of such half-yearly instalment being £4 0s. 3d. for each £100 advanced. In the case of advances for the purposes of paying off existing liabilities or of buying stock, machinery, or implements, the loan must be repaid by equal half-yearly instalments of the amount of £3 11s. for every £100 advanced within twenty-five years from the date of its granting.

(iv.) *Transactions of Agricultural Bank, 1906 to 1910.* The subjoined table shews particulars of the transactions of the Agricultural Bank for each year ended 30th June, from 1906 to 1910 inclusive:—

PARTICULARS OF TRANSACTIONS OF THE AGRICULTURAL BANK, QUEENSLAND,
DURING EACH FINANCIAL YEAR, 1906 TO 1910.

Particulars.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.
Applications received ... No.	834	503	512	586	746
,, ,, Amount, £	120,256	69,472	70,107	92,363	114,901
Applications granted ... No.	558	313	319	430	680
,, ,, Amount, £	69,178	36,357	36,706	50,113	79,518
Amounts advanced ... £	59,640	30,877	23,868	33,786	48,245
,, repaid ... £	3,789	12,929	16,740	16,184	21,551
,, outstanding to date £	94,268	112,216	119,344	136,947	163,641

6. **South Australia.**—(i.) *Legislation.* Under the State Advances Act of 1895, amended in 1896 and 1901, a State Bank has been established in South Australia for the purpose of making advances (i.) to farmers and other producers, (ii.) in aid of industries on the security of lands held in fee simple or under Crown leases, and (iii.) to local authorities upon the security of their rates. The bank, managed by a board consisting of five trustees appointed by the Governor, has funds raised by the issue of mortgage bonds, carrying interest at a rate not exceeding 4 per cent., to an amount not greater than the total amount due to the bank for State advances, and in any case not greater than £3,000,000. On 23rd December, 1908, the Advances to Settlers on Crown Lands Act was passed. This measure is referred to in (iv.) below. Several Acts have, from time to time, been passed dealing with seed wheat advances. These were, in the main, similar to those enacted in Victoria, referred to in 4 (viii.) above.

(ii.) *Amount and Repayment of Advances.* No advance to farmers or to other producers, or in aid of any industry, may exceed three-fifths of the unimproved value of the fee simple of the land and permanent improvements thereon, and if the land has acquired a special additional value by reason of cultivation as a vineyard or orchard, *plus* one-third of such special additional value. If the advance be on the security of a Crown lease, the amount of the loan may not exceed one-half the selling value of the lease, including the interest of the holder in any improvements on the land. The amount lent to any one person at any time may not exceed £5000. Advances are repayable by half-yearly instalments, the rate of interest, up to the limit of 5 per cent. per annum, being a matter of arrangement between the bank and the borrower.

(iii.) *Transactions of the State Bank, 1905 to 1909.* In addition to assisting farmers and other producers, the State Bank makes, as mentioned above, advances in aid of industries and also to local authorities. The following table shews particulars of the transactions with farmers of the State Bank for each year from 1905 to 1909 inclusive:—

SOUTH AUSTRALIA.—PARTICULARS OF TRANSACTIONS OF THE STATE BANK

FOR EACH YEAR ENDED 31ST MARCH, 1905 TO 1909.

Particulars.	1905.	1906.	1907.	1908.	1909.
Loans raised ... ... £	23,675	46,015	57,165	64,180	138,700
,, repaid ... ... £	36,560	38,465	50,515	53,015	123,600
Applications received ... No.	225	271	260	250	796
,, ,, Amount, £	63,340	94,794	111,609	138,466	348,777
Applications granted ... No.	126	180	146	210	718
,, ,, Amount, £	24,865	56,181	67,420	93,177	224,820
Amounts advanced ... £	24,529	51,826	58,060	76,092	166,752
,, repaid ... £	37,200	39,531	51,265	50,727	105,501
,, outstanding to date £	336,861	349,156	355,951	381,316	396,416

(iv.) *The Advances to Settlers on Crown Lands Acts 1908 and 1909.* Under the 1908 Act a Board, called the Advances to Settlers Board, was created. The Treasurer is authorised to set apart a sum not exceeding £200,000 in any one financial year for the purpose of loans to settlers. The maximum amount which may be advanced to any one settler is £600, and for a period of five years following the date on which the advance is made the settler is required to pay interest at the rate of 5 per cent. per annum, payable half-yearly. At the expiration of that period it is provided that he must repay the amount advanced by fifty equal half-yearly instalments, together with interest at 5 per cent. on the balance outstanding. A rebate of 1 per cent. interest is allowed if the half-yearly payment is made within fourteen days of the date on which it falls due. Advances may be made on prescribed security for the purpose of making improvements on a holding,

such as ring-barking, clearing, boring for water, etc.; or for discharging a mortgage existing on a holding; or for stocking a holding, provided that the necessary improvements have been made on the land. The amount of the advance may not exceed a sum equal to fifteen shillings in the pound on the value of improvements already made, and may not exceed twelve shillings in the pound on improvements made if the land be mortgaged.

During the year ended 30th June, 1909, thirty-four applications, amounting to £6095 were received for advances under this Act. Of these, eleven, representing a value of £1775, were granted, the amount actually advanced being £276. For the year 1909-10, the number of applications for advances was 102, aggregating £19,577, and fifty-five, totalling £9418, were approved of. As, however, some of these were granted by instalments, the actual amount advanced was £8087.

7. **Western Australia.**—(i.) *Legislation.* By the Agricultural Bank Act of 1894 the Governor of Western Australia was empowered to establish a bank for the purpose of promoting the occupation, cultivation, and improvement of the agricultural lands of the State. This Act was amended from time to time until a consolidating Act was passed in the year 1906 repealing all previous enactments on the subject. Under this last Act the bank was placed under the control of three trustees, appointed by the Governor, in whom is vested the whole of the bank property. The necessary funds are provided for by the issue of mortgage bonds bearing interest at a rate not exceeding 4 per cent. per annum. The amount authorised to be raised was £1,000,000, but by an Amendment Act in 1907 this sum was increased to £1,500,000, and by a further amendment in 1909 it was increased to £2,000,000. In the latter half of the year 1910, a Bill was introduced into Parliament by which it was proposed to make the amount authorised to be raised £2,500,000.

(ii.) *Purposes for which Advances may be made.* The bank is authorised to make advances for (*a*) ringbarking, clearing, fencing, draining, or water conservation; (*b*) for discharging any existing mortgage; (*c*) for the purchase of stock for breeding purposes; or (*d*) for the purchase of agricultural machinery manufactured in Western Australia subject to the employees engaged in the manufacture of such machinery being paid the ruling rate of wages.

(iii.) *Amount of Advances.* Advances may be made to an amount not exceeding £400 up to the full value of the improvements proposed to be made. Further advances may be made to an amount not exceeding £250 up to half the value of additional improvements proposed to be made. No advance, however, for the purpose of discharging existing mortgages may be made to an amount exceeding three-quarters of the value of improvements already made, and the total advances to any one person may not at any time exceed £750. Not more than £100 may be advanced to any person for the purpose of purchasing stock or agricultural machinery. Advances are made only on a first mortgage, but a second mortgage may be taken as collateral security. When any land is held by two or more persons as joint proprietors, the amount to be advanced may be multiplied by the number of such joint proprietors.

(iv.) *Repayment of Advances.* During the five years following the date of the loan the borrower pays interest only, at the rate of 5 per cent. per annum. After the expiration of that period the amount advanced, with interest at 5 per cent., must be repaid within twenty-five years by equal half-yearly instalments. In the case of advances for the purpose of buying stock the bank fixes the time and manner of repayment.

(v.) *Particulars of Transactions of Agricultural Bank, 1904 to 1909.* The following table gives particulars of transactions of the Agricultural Bank for each year from 1904 to 1909 inclusive:—

PARTICULARS OF TRANSACTIONS OF AGRICULTURAL BANK, 1904 to 1909.

AMOUNTS ADVANCED FOR WHICH IMPROVEMENTS HAVE BEEN EFFECTED—

Year ended the 30th June.	Amounts Advanced.	Improvements Effected.							
		Clearing.	Cultivating.	Ring-barking.	Fencing.	Draining.	Wells and Reservoirs.	Buildings	Total.
	£	£	£	£	£	£	£	£	£
1904	215,000	243,870	60,454	10,787	17,265	1,675	9,861	33,168	377,080
1905	297,600	310,602	67,342	12,454	21,243	2,012	12,355	44,203	470,211
1906	394,164	398,376	86,837	17,044	30,805	2,596	15,482	57,005	608,145
1907	525,178	512,471	108,588*	26,845	46,524	3,273	21,616	75,953	795,270
1908	743,599	643,341	120,688*	44,363	98,663	4,127	34,789	82,325	1,028,296
1909	1,004,675	780,907	124,338*	62,711	177,410	4,675	48,543	83,708	1,282,292

* Including £4321 for orchards.

The following table gives particulars as to the amount of loans raised and repaid, the number and amount of applications received and granted, and the amounts lent and repaid for each financial year from 1905-6 to 1909-10 inclusive :—

WESTERN AUSTRALIA.—PARTICULARS OF TRANSACTIONS OF THE AGRICULTURAL BANK FOR EACH FINANCIAL YEAR, 1905-6 to 1909-10.

Particulars.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.
Applications received ... No.	1,270	1,970	2,598	2,915	2,593
,, ,, Amount, £	171,750	278,625	368,710	433,575	439,425
Applications granted ... No.	1,073	1,604	2,453	2,628	2,502
,, ,, Amount, £	127,725	211,675	308,700	347,525	392,650
Amounts advanced ... £	95,782	131,271	218,421	261,077	252,407
,, repaid ... £	23,917	34,201	28,754	36,040	151,686
,, outstanding to date £	323,465	420,535	610,202	835,239	935,960

8. **Tasmania.**—(i.) *Legislation.* Under the State Advances Act 1907, assented to 22nd November of that year, authority is given to make advances to persons holding land on credit purchase. Three persons called "the Trustees of the Agricultural Bank of Tasmania" have power to administer the provisions of the Act. Funds were raised by the issue of debentures or inscribed stock for a sum not exceeding £50,000, interest at 4 per cent. per annum being payable on same.

(ii.) *Purposes for which Advances may be made.* Loans may be granted for any of the following purposes:—(*a*) payment of liabilities already existing on the holding; (*b*) carrying on agricultural, dairying, grazing, or horticultural pursuits; (*c*) making or adding to improvements.

(iii.) *Amount of Loans.* The minimum amount of any loan must not be less than £25, and the maximum not greater than £500. No advance may exceed one-half of the amount actually paid to the Crown in respect of the land held by the borrower under purchase upon the credit system, *plus* one-half of the present value of any improvements upon such land.

(iv.) *Repayment of Loans.* Interest at the rate of 6 per cent. per annum is payable on all advances made. After five years the borrower must begin to pay off the principal

in fifty half-yearly instalments, but the advance may, at the option of the borrower, be repaid at any time sooner than is provided, and in larger instalments.

(v.) *Particulars of the operations of the Agricultural Bank.* During the eighteen months ended 30th June, 1909, seventy-seven applications for advances were made, which, with forty-nine carried over from the previous year, made a total of 126 applications, representing £11,110. Of these, ninety-four, of a value of £6571, were granted, the amount advanced being £5687. The amount repaid during the period was £30, leaving a balance of £5657 outstanding. For the year 1909-10, the number of applications for loans was eighty-two, totalling £5845. The trustees of the bank approved of sixty-one of these, amounting to £3593, and refused eleven, representing a value of £850, owing to the applicants not being entitled to loans in accordance with the Act. During the year one borrower failed to comply with the requirements of his mortgage deed and his selection was sold.

§ 22. Graphical Representation of Crops.

1. **Areas of Principal Crops.**—A graphical representation of the areas in the Commonwealth devoted to each of the leading crops from 1860 to the present time is furnished on page 439.

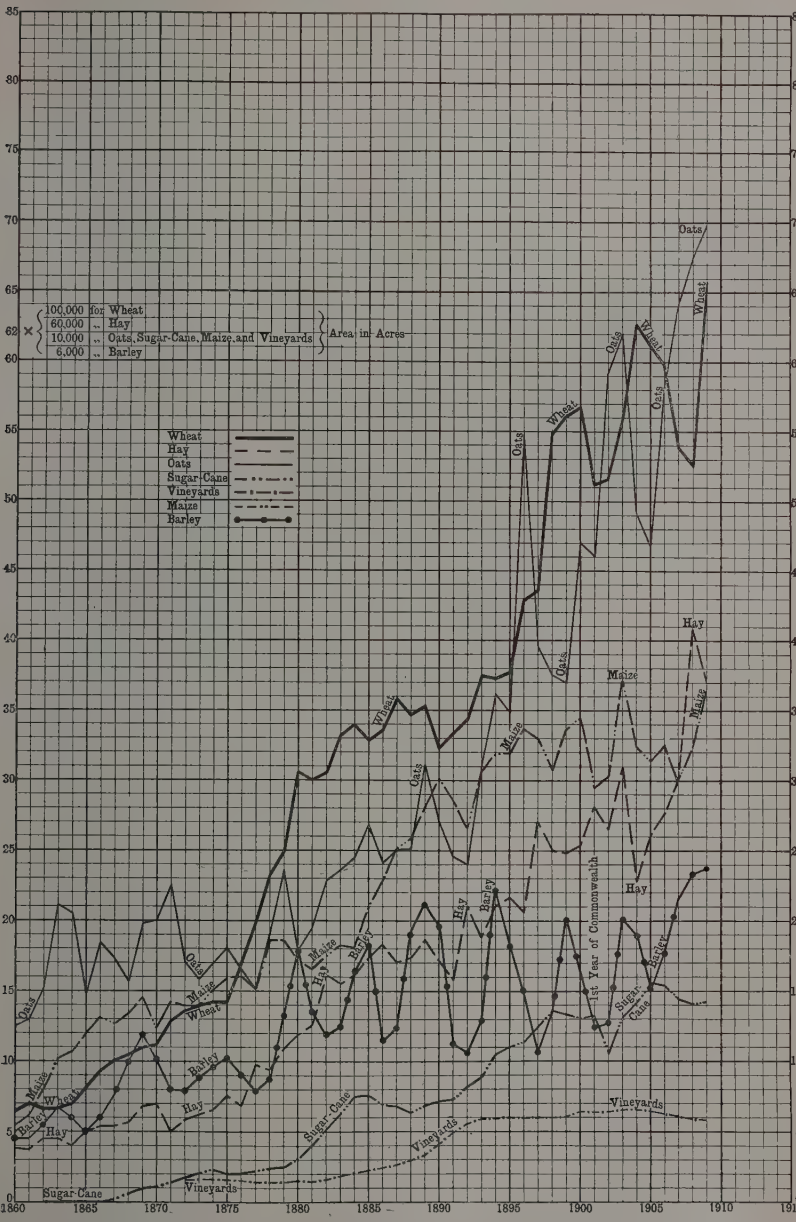
(i.) *Wheat.* In the case of wheat, the Commonwealth's principal crop, the graph indicates that the fifty seasons under review divide themselves naturally into five distinct periods, three of moderate and fluctuating increases and two of extremely rapid increases. Thus, between the seasons 1860-1 and 1875-6, a moderate rate of increase was in evidence, the area increasing from 640,000 to 1,420,000 acres. During the five succeeding seasons a very rapid increase took place, the total in 1880-1 amounting to over 3,000,000 acres. For fifteen years thereafter the increase in area was not large, and in two seasons, viz., 1885-6 and 1890-1, marked decreases were experienced. The total increase for the fifteen years was about 700,000 acres, the total for 1895-6 being rather more than 3,750,000 acres. The succeeding five years witnessed a rapid increase in area to a total of more than 5,600,000 acres, followed by a further period of marked fluctuations; this latter period, however, contained the season of maximum wheat-cropping, viz., that of 1904-5, when an area of 6,586,000 acres was so cropped.

(ii.) *Hay.* Hay-growing, which, next to the growing of wheat for grain, is the most important branch of agriculture in the Commonwealth, will be seen from the graph to have fluctuated very considerably from year to year during the period under review, these fluctuations being due in the main to seasonal variations and to variations in the relative prices of grain and hay crops. It will be seen that the features of the graphs are a moderate increase from 1860-1 to 1875-6, a fairly rapid increase from 1875-6 to 1882-3, moderate increase thence to 1896-7, succeeded by marked fluctuations from this point onwards with, on the whole, a moderate rate of increase until 1908-9 when the maximum of 2,450,000 acres was attained, succeeded by a decline in 1909-10 to 2,228,000 acres.

(iii.) *Oats.* The graph relating to oats exhibits extremely marked fluctuations from year to year in the area devoted to this crop, the general tendency, however, being one of increase. This feature was specially marked from 1892-3 to 1896-7, while the succeeding years were characterised by very extensive fluctuations. During the past four seasons the area under oats has increased rapidly to a maximum of 698,000 acres in 1909-10.

(iv.) *Maize.* The graph relating to maize indicates that the area devoted thereto in Australia, although somewhat fluctuating, increased with fair rapidity until the season

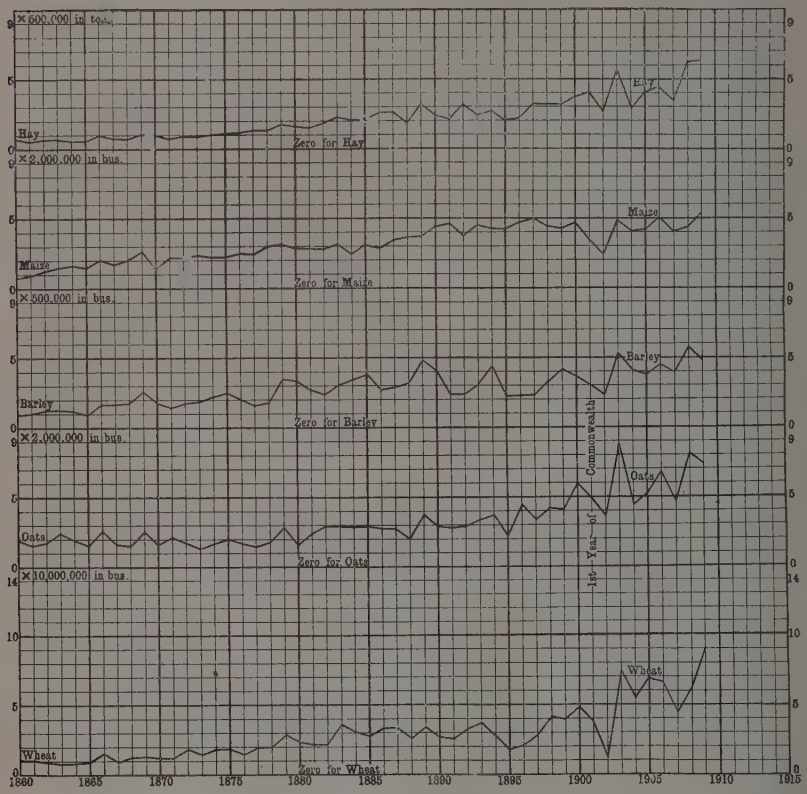
GRAPHS SHEWING THE AREA UNDER THE PRINCIPAL CROPS IN THE COMMONWEALTH FROM 1860-1 TO 1908-9.



(See pages—for wheat, 366; oats, 375; maize, 379; barley, 382; hay, 391; sugar-cane, 396; and vineyards, 401.)

EXPLANATION OF GRAPHS.—The base of each small square represents an interval of one year, while the vertical height represents a number of acres, varying with the nature of the crop in accordance with the scale given on the left-hand of the diagram. The height of each graph above the base line denotes, for the crop to which it relates, the total area under cultivation in the Commonwealth during the successive seasons.

GRAPHS SHEWING THE PRODUCTION OF THE PRINCIPAL CROPS IN THE COMMONWEALTH FROM 1860-1 TO 1908-9.



(See pages—for wheat, 367; oats, 375; barley, 383; maize, 379; and hay, 393.)

EXPLANATION OF GRAPHS.—In this diagram a separate base line is provided for each of the crops dealt with. In each instance the base of a small square represents an interval of one year, the vertical height of such square representing in the case of the wheat graph, 10,000,000 bushels oats, 2,000,000 bushels; barley, 500,000 bushels; maize, 2,000,000 bushels; and hay, 500,000 tons. The height of each graph above its base line denotes the aggregate yield in the Commonwealth of that particular crop during the successive seasons.

1896-7, since when it has varied above and below the point then reached, on the whole remaining practically stationary. The maximum area under maize, viz., 372,000 acres, was attained in the season 1903-4.

(v.) *Sugar-Cane.* In the case of sugar-cane the graph shews a fairly rapid rate of increase to 1874-5, followed by a period of five years during which the area increased but slowly. From 1879-80, however, the sugar-cane area rose rapidly until in 1884-5 a total of more than 75,000 acres was reached. Then followed a period of diminished cultivation, and it was not until 1892-3 that so high a total was again attained. After this the area rose rapidly to 136,000 acres in 1898-9, but during the next five years a decline took place, the area for 1903-4 being 132,000 acres. A marked decline was in evidence in 1902-3, and a corresponding recovery in 1903-4. The season of maximum area, viz., 156,000 acres, was 1905-6, since when a marked decline in area has been in evidence.

(vi.) *Barley.* The Commonwealth barley crop, although not an extensive one, is yet one which has exhibited from time to time very marked fluctuations in area. The graph representing this crop is consequently a very irregular line. The total has, on the whole, increased but slightly since 1880, rapid increases in certain years being succeeded by equally rapid decreases in subsequent years. The maximum area under barley, viz., 143,000 acres, was attained in the season 1909-10.

(vii.) *Vines.* The graph relating to area under vines, from 1872-3 onwards, indicates that there were two periods of very slow increase, one from 1872-3 to 1881-2, the other from 1893-4 to 1904-5. Between these, viz., from 1881-2 to 1893-4, a moderate rate of increase of area was experienced, the total for the Commonwealth advancing during that time from 14,600 acres to 57,400 acres, while since 1904-5 the area has fallen consistently. The season of maximum area under vineyards was 1904-5, with a total of about 65,700 acres.

2. **Production.**—The diagram on page 440 furnishes a graphical representation of the aggregate yields from 1860-1 to 1909-10 of five of the principal crops of the Commonwealth.

(i.) *Wheat.* This graph brings out clearly the fact that while on the whole the production of wheat in the Commonwealth is increasing with fair rapidity, the fluctuations in the total quantity produced have been more marked in recent than in earlier years. Thus since the year 1890 there have been three seasons of extremely low output, viz., in 1891-2, 1895-6, and 1902-3, with aggregate yields respectively of 25,700,000 bushels, 18,300,000 bushels, and 12,400,000 bushels. On the other hand there have been four seasons in which the total production was exceptionally high. These will be seen from the graph to have been the seasons 1893-4, 1900-1, 1903-4, and 1909-10, the total yields for which were 37,100,000 bushels, 48,400,000 bushels, 74,100,000 bushels, and 90,400,000 bushels respectively. Each of these yields represented at the date of its attainment the maximum Australian wheat crop, the last-mentioned being the highest yet reached.

(ii.) *Oats.* From 1860-1 to 1880-1 the oat crop of the Commonwealth, although exhibiting from year to year fluctuations more or less marked, gave no indications of a tendency to increase with the advance in population. This is well shewn in the diagram, by the persistence with which the graph for this period adheres to the line denoting 4,000,000 bushels, the yield for 1880-1 being actually lower than that for 1860-1. From this latter season to 1894-5 the variation was on a somewhat higher level, and is shewn in the diagram to have been in the vicinity of the line representing 6,000,000 bushels. From this point onwards a tendency to more rapid increase in production is in evidence, obscured somewhat by extensive fluctuations corresponding to those referred to above in the case of wheat. Thus in 1895-6 and 1902-3 the total yields were only 4,400,000 and 7,300,000 bushels respectively, while in 1900-1 and 1903-4 aggregates respectively of

12,000,000 and 17,500,000 bushels were reached, this latter being the maximum oat crop of the Commonwealth.

(iii.) *Barley.* The Australian barley crop will from the graph be seen to have fluctuated very considerably throughout, these variations being due rather to fluctuations in the area sown than to adverse seasons. From 1879-80 to 1902-3 the curve rises above and falls below the line representing 1,500,000 bushels. For more recent years the graph bears evidence of an increasing, though still fluctuating, output. The maximum barley crop of the Commonwealth was that of 2,870,000 bushels in 1908-9.

(iv.) *Maize.* The maize graph indicates a rapid increase in output from 1860-1 to 1869-70, followed by a moderate increase from the latter season to 1886-7, and a further rapid increase to 1891-2. From the last-mentioned season onwards the production has fluctuated considerably, but little increase has, on the whole, been experienced, the total for 1891-2 being 9,300,000 bushels, as compared with 10,770,000 bushels for 1909-10, the maximum Australian maize crop. As in the case of all other crops, the maize yield for 1903-4 was much higher than those for the years immediately preceding and succeeding.

(v.) *Hay.* The graph relating to the Commonwealth output of hay indicates a fairly continuous increase in production from the season 1860-1, when the total stood at 340,000 tons, to that of 1887-8, when it reached 1,330,000 tons. In subsequent years marked fluctuations have been in evidence, but the tendency has, on the whole, been one of increase. The maximum hay crop of the Commonwealth was that of the season 1909-10, when the total production reached 3,153,000 tons.

SECTION IX.

FARMYARD AND DAIRY PRODUCTION.

§ 1. Introductory.

1. **General.**—Amongst the live stock brought out by Captain Phillip in 1788 were included one bull, four cows, one calf, and twelve pigs, these being established at Farm Cove when Port Jackson was settled. Of the early importations of cattle the greater part was slaughtered to relieve the necessity of the colonists in the famines which several times threatened the existence of the young community. With regard to the existing herds it may be noted that they have sprung not only from the original stock, but have been improved by the introduction of stud cattle and pigs, especially during late years. Stock-raising, with regard to the special requirements of dairying, etc., has in fact been scientifically considered only in comparatively recent times. The technical advances made in the manufacture of butter and cheese in Europe and elsewhere, and the necessity for keeping pace with them in connection with the export trade of Australia, demanded in Australian stock-raising a judicious crossing of strains with a view to improving the quantity and quality of the milk supply. Further, the pasturage was improved by the eradication of grasses and herbage of little or no use, and the planting of suitable grasses and other fodder plants. Much of the indigenous herbage forms, however, excellent food for stock. Although some of the State Governments have made considerable importations for stud purposes, the importation of British and other cattle for breeding purposes is ordinarily under private enterprise, but is safeguarded by Government supervision in order to prevent the introduction of diseases and pests, with the result that Australia is comparatively free from stock diseases. Permanent structures for the shelter of dairy herds are required only to a very small extent in the Commonwealth, the mildness of the climate rendering it possible for stock to thrive in the open throughout the year. Practical experience has, however, demonstrated the wisdom of rugging or otherwise protecting dairy cattle during the colder months, while the provision of shelters in the form of plantations of trees is attended by beneficial results. Where winter fodder must be grown it is given to the cattle in the fields, and consists of lucerne, oats, maize, barley, rye, and mangolds. Ensilage is highly recommended by dairy experts, and increasing use is being made thereof. Continued expansion of the dairying industry, and particularly its extension into non-coastal districts, will involve a more general use of the silo.

Some of the indigenous Australian grasses are particularly suitable for dairy cattle, since they possess milk-producing as well as fattening properties, but many of the holdings are sown with English and other imported grasses, varieties being chosen to suit particular localities. The area of land devoted to green food and permanent artificially-sown grasses is constantly increasing, its produce being, for the most part, devoted to the depasturing of dairy herds. The opinion, long held, that only heavily-grassed country with good rainfall was profitable for dairying has been controverted by experience, it being shown that with proper care more lightly clad regions can be made to yield good milk results.

2. **State Supervision of Industry.**—Each of the State Agricultural Departments exercises considerable supervision in regard to the industry. Dairy experts are employed to give instruction in approved methods of production, to examine animals, to inspect

the buildings used for milking and separating, and to examine the marketable produce. A high standard of dairy hygiene, cleanliness of *personnel* and *materiel*, and purity of produce have also been insisted upon under State laws. Financial assistance has been given to facilitate the economic handling of dairy products, and much benefit has resulted, the advances having generally been promptly repaid.

For the maintenance of the purity and quality of Australian butter, the Commonwealth regulations under the Commerce Act 1905 enact that butter intended for shipment oversea has to be covered with a true trade description, and that at least the following matter should appear in the brand :—The word "Australia," the name of the State in which it was produced, net weight, manufacturer's or exporter's name or registered brand, and the words, "pure creamery butter," "pastry butter," "milled butter," or "re-packed butter," as the case may require. Other matter may be added, but it must be true, and not liable to mislead.

Butter may be shipped at the exporter's discretion in one of three different ways :—

(i.) On his certifying that the butter contains no fat other than butter fat, not more than 16 per cent. of water, 3 per cent. of casein, 0.5 per cent. of boric acid, 4 per cent. of salt, not less than 82 per cent. of butter fat, any colouring matter deemed harmless by the Minister. The inspector checks the contents to see that they are in conformity with the brands on package and the exporter's declaration, and an export permit is then issued.

(ii.) The exporter may apply in writing to have his butter classified prior to export, and thus dispense with the written statement regarding its composition. The inspector then examines for quality in addition to checking the trade description, and grades as follows:—95 to 100 points, "superfine"; 90 to 94 points, "first grade"; 83 to 89, "second grade"; 75 to 82, "third grade"; under 75, "pastry" (branded as such). Certificates are issued according to the grade awarded, and the issue necessitates the branding of each box in the consignment with the Commonwealth stamp "approved for export" and the certificate number. In order to facilitate branding, all certificates for a specific grade issued on one day bear the same number, the registered brand on the packages forming the leading feature of each certificate.

(iii.) A separate written application from the exporter is necessary before a grade stamp is placed on the boxes by the examining officer prior to shipment. This grade stamping, as well as the classification itself, is purely optional with the exporter. Where such an application is received, the grade is stamped on the packages in addition to the Commonwealth stamp and certificate number.

By these means, purity and quality are guaranteed, and trade is also facilitated, since quantities of butter are purchased solely on the certificate issued, without ever being seen.

Regulations fixing standards for other dairy products were also enacted.

New regulations, to come into force on 1st July, 1911, have been approved. They contain important changes in regard to the standard for export dairy products. The new standards will be as follow :—

Butter.—Butter which contains only—No fat other than butter fat; not more than 15 per cent. of water, 3 per cent. of casein, 0.5 per cent. of boric acid, 4 per cent. of salt; not less than 82 per cent. of butter fat; any colouring matter deemed by the Minister to be harmless.

Cheese.—Cheese which does not contain any foreign matter other than rennet, salt, or colouring matter deemed by the Minister to be harmless.

Concentrated Milk.—Pasteurised milk which is concentrated by any process whatever, and not subsequently sterilised, and which contains not less than 9 per cent. of

butter fat and 24 per cent. of milk solids not fat, and no foreign substance other than 0.5 per cent. of boric acid.

Condensed Milk.—Milk which is condensed or concentrated by any process whatever, with or without the addition of cane sugar, and which, when containing such sugar, also contains not less than 9 per cent. of butter fat, and 22 per cent. of milk solids not fat, or which, when not containing such sugar, contains not less than 8 per cent. of butter fat and 20 per cent. of milk solids not fat.

Dried Milk.—Milk from which the water has been removed by a process of heating, without the addition of any extraneous matter, and which, when dissolved in or treated with water, according to any directions supplied by the maker or vendor thereof, produces milk as defined in this Schedule.

Honey.—The ripened, unfermented honey of bees, which does not contain any foreign matter.

Milk.—The milk of cows, whether mixed or not, and containing not less than 3 per cent. of butter fat, nor less than 8.5 per cent. solids not butter fat.

The trade description prescribed must be permanently affixed on the goods or on the containing packages. In the case of butter the trade description must, with additional particulars, be indelibly impressed on the outer covering.

Butter and cheese are to be graded by the examining officer as follows :—

BUTTER.—

Superfine—Pure creamery butter, graded at 95 to 100 points.
First grade—Pure creamery butter, graded at 90 to 94 points.
Second grade—Pure butter, graded at 83 to 89 points.
Third grade—Pure butter, graded at 75 to 82 points.
Pastry butter—Pure butter, graded at less than 75 points.

CHEESE.—

Superfine—Pure cheese, graded at 95 to 100 points.
First grade—Pure cheese, graded at 90 to 94 points.
Second grade—Pure cheese, graded at 83 to 89 points.
Third grade—Pure cheese, graded at 75 to 82 points.

In grading butter and cheese, the maximum points to be awarded are : Flavour and aroma, 50 points ; texture, including body, grain, and moisture, 30 points ; condition, including colour, salting, packing, and covering, 20 points. An official grade mark is to applied to all export butter and cheese graded at over 89 or under 75 points, as follows :—

Butter and cheese graded at 95 to 100 points—Superfine.
Butter and cheese graded at 90 to 94 points—First grade.
Butter graded at under 75 points—Pastry.
Cheese graded at under 75 points—Below standard.

Impure butter and cheese are not to be graded at all. The exportation of unsound, inferior, or abnormal dairy products, is prohibited, unless the trade description applied to the goods includes the words, "Below Standard."

3. **Mixed Farming.**—Dairying is not now, as formerly, wholly confined to farmers, since many graziers in a large way of business have lately given it their attention. In non-coastal regions it is generally carried on in conjunction with agriculture and sheep-raising, sufficient fodder being grown to carry the cattle through the winter months. Local wants are thus met, and in many places remote from the metropolis well-equipped factories have been established.

4. **Factory System.**—Cream separation and butter-making are often carried on together under the co-operative system. The creation of large central butter factories, supplied by numerous separating establishments or "creameries," has resulted in a considerable reduction in cost of manufacture, since improved appliances, such as refrigerators, may be profitably worked at the larger establishments. The product is also

of a more uniform quality. The number of farmers who adhere to hand processes is steadily diminishing. Formerly the average quantity of milk used per pound of hand-made butter was about 3 gallons, but separator butter requires only about 2.6 gallons.

5. **Butter and Cheese Factories.**—The establishments in the Commonwealth where the manufacture of butter, cheese, and condensed milk was carried on, numbered 550 in 1909. These were distributed as regards the various States as follows:—New South Wales, 181; Victoria, 211; Queensland, 80; South Australia, 53; Western Australia, 3; Tasmania, 22.

§ 2. Milk, Butter, and Cheese.

1. **Dairy Herds.**—Since the drought year 1902, there has been in each State, a general yearly increase in the number of dairy cows. In New South Wales, Victoria, South Australia proper, and Tasmania—as will be seen from the table of cattle and dairy cattle given below—the proportion of dairy cattle to all cattle is high. In Queensland, the Northern Territory of South Australia, and Western Australia, there is a greatly preponderating number of other cattle, dairying not having been established in the tropical regions of the Continent:—

CATTLE AND DAIRY CATTLE, COMMONWEALTH, 1905 to 1909.

State.		1905.	1906.	1907.	1908.	1909.
New South Wales ...	All Cattle ...	2,337,973	2,549,944	2,751,193	2,955,934	3,027,727
	Dairy Cows ...	597,605	667,708	713,223	736,683	755,879
Victoria	All Cattle ...	1,737,690	1,804,323	1,842,807	1,574,162	1,549,640
	Dairy Cows ...	649,100	701,309	709,279	609,166	625,063
Queensland	All Cattle ...	2,963,695	3,413,919	3,892,232	4,321,600	4,711,782
	Dairy Cows ...	172,000†	215,000†	282,883	304,281	333,839
South Australia ...	All Cattle ...	300,721	325,724	335,155	340,376	344,034
Northern Territory ...	All Cattle ...	346,910	354,371	374,199	407,992	414,046
South Australia ...	Dairy Cows ...	93,069	97,843	100,743	106,269	110,757
Northern Territory ...	Dairy Cows ...	756	680	489	546	464
Western Australia ...	All Cattle ...	631,825	690,011	717,377	741,788	793,217
	Dairy Cows ...	35,011	34,822	31,489	31,522	29,176
Tasmania	All Cattle ...	206,211	211,117	215,523	205,827	199,945
	Dairy Cows ...	49,618	49,132	54,245	50,931	50,996
Commonwealth ...	All Cattle ...	8,525,025	9,349,409	10,128,486	10,547,679	11,040,391
	Dairy Cows ...	1,597,159	1,766,494	1,892,351	1,839,398	1,906,174

† Statistics not collected: figures estimated.

2. **Milk.**—The annual quantity of milk produced per dairy cow varies greatly with locality and season, probably reaching as high as 500 gallons, but averaging for the whole of Australia, for all dairy cows and for all seasons, something under 250 gallons per annum. The best yields over a series of years appear to be in South Australia, New South Wales, Victoria, and Tasmania, while Western Australia is below Queensland. In the following table the average yields per cow for 1908 and 1909 are taken from the number of dairy cows who were, during any part of the year, milking. The average given is considerably below that for cows which were yielding during the greater part of the year.

PRODUCTION OF MILK, COMMONWEALTH, 1908 and 1909.

Heading.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust	Tas.	C'wealth.
1908—							
Dairy cows ... No.	736,683	609,166	304,261	106,815	31,522	50,931	1,839,398
Production of milk gals.	188,518,562	148,122,200	63,934,402	28,883,000	4,531,212	13,520,000	447,509,376
Aver. yield per cow gals.	257	243	210	270	144	265	243
1909—							
Dairy cows ... No.	755,879	625,063	333,839	111,221	29,176	50,996	1,906,174
Production of milk gals.	201,183,337	162,994,658	70,642,888	29,778,032	4,893,446	11,600,000*	481,092,361
Aver. yield per cow gals.	266	261	212	268	168	227	252

* Estimated.

3. **Butter and Cheese.**—The butter output shews, in general, a tolerably steady increase since the drought year 1902, the most marked development being in Queensland. The production of butter reached its highest figures in 1906. In both butter and cheese a falling-off is shewn in some of the States in 1907 and 1908, due to the dryness of the season. There was a recovery in 1909, the cheese production reaching its highest figure. For the five years from 1905 to 1909 the figures are:—

PRODUCTION OF BUTTER AND CHEESE, COMMONWEALTH,

1905 TO 1909.

State.	1905.	1906.	1907.	1908.	1909.
	BUTTER.				
	lbs.	lbs.	lbs.	lbs.	lbs.
New South Wales	53,040,250	58,941,137	60,041,429	61,380,876	62,865,608
Victoria	57,606,821	68,088,168	63,746,354	48,461,398	55,166,555
Queensland	20,319,976	22,746,593	22,789,158	23,838,357	24,592,711
South Australia	8,226,805	8,873,632	8,519,340	8,130,560	8,482,168
Western Australia	423,270	380,157	436,529	365,593	414,453
Tasmania*	1,281,604	904,930	847,860	3,140,573	2,751,757
Commonwealth†	140,898,726	159,934,617	156,380,670	145,317,357	154,273,252
	CHEESE.				
	lbs.	lbs.	lbs.	lbs.	lbs.
New South Wales	4,625,980	5,458,645	4,586,857	4,763,360	4,775,268
Victoria	4,297,350	4,877,593	4,397,909	4,328,644	5,025,834
Queensland	2,682,089	2,921,140	2,684,588	3,199,510	3,662,497
South Australia	1,174,867	1,398,785	1,385,790	1,556,894	1,578,378
Western Australia	4,831	1,314	680	980	1,570
Tasmania*	369,913	190,481	327,839	910,400	731,290
Commonwealth†	13,155,030	14,847,958	13,383,563	14,759,788	15,774,837

* Prior to 1908 Tasmanian statistics relate only to the quantities made in factories. † The totals for the Commonwealth here given prior to 1908 are exclusive of Tasmanian butter and cheese made elsewhere than in factories.

4. **Concentrated Milk.**—"Condensed" or "concentrated" milk denotes milk the bulk of which is reduced by evaporation, no sweetening agent being added. When a sweetening agent is added it is called "preserved" milk. Small quantities of such milk have been made, but the industry is at present by no means a large one. No condensed or concentrated milk is made in South Australia, Western Australia, or Tasmania. In New South Wales, Victoria, and Queensland the following quantities are returned for 1908 and 1909:—

CONDENSED AND CONCENTRATED MILK MADE, 1908 and 1909.

Year.	N.S.W.	Victoria.	Queensland.	Commonwealth.
	lbs.	lbs.	lbs.	lbs.
1908	2,399,673	3,308,854	3,935,024	9,643,551
1909	2,400,687	3,487,312	7,038,202	12,926.201

5. **Oversea Trade in Milk, Butter, and Cheese.**—The tables following give the imports, exports, and net exports or imports of butter, cheese, and milk. In each of the five years exports of butter exceeded imports; in four the cheese import was heavier than the export, and this was the case each year with milk.

IMPORTS, EXPORTS, AND NET IMPORTS OF BUTTER, CHEESE AND MILK, COMMONWEALTH, 1905 TO 1909.

IMPORTS.

Products.		1905.	1906.	1907.	1908.	1909.
Butter	lbs.	592,201	70,143	20,885	40,874	80,111
"	£	25,509	3,133	910	2,368	4,078
Cheese	lbs.	384,718	304,951	299,711	566,808	367,504
"	£	12,494	11,533	12,371	20,433	14,720
Milk—concentrated and preserved[1]	lbs.	10,943,788	10,672,265	9,979,091	9,145,306	7,439,232
" " " "	£	196,471	189,316	170,478	180,194	145,736

EXPORTS.

Butter	lbs.	56,477,536	75,802,856	66,076,915	51,206,359	55,700,987
"	£	2,354,399	3,240,063	2,890,261	2,387,450	2,402,619
Cheese	lbs.	193,618	252,115	495,530	153,589	203,477
"	£	5,291	6,832	12,896	5,237	5,771
Milk—concentrated and preserved[1]	lbs.	495,089	311,540	322,119	309,789	360,821
" " " "	£	9,319	6,375	6,305	7,013	7,852

NET EXPORTS.[2]

Butter	lbs.	55,885,335	75,732,713	66,056,030	51,165,485	55,620,876
"	£	2,328,890	3,236,930	2,889,351	2,385,082	2,398,541
Cheese	lbs.	— 191,110	— 52,836	195,819	— 413,219	— 164,027
"	£	— 7,203	— 4,701	525	— 15,196	— 8,949
Milk—concentrated and preserved[1]	lbs.	—10,448,699	—10,360,725	— 8,956,972	— 8,835,517	— 7,078,411
" " " "	£	— 187,152	— 182,941	— 164,173	— 173,181	— 137,884

1. See definition on page 447. 2. — signifies net imports.

The large quantities of concentrated and preserved milk imported for local use indicate room for development in this industry.

6. **Interstate Trade in Milk, Butter, and Cheese.**—The extent of interstate trade in dairy products, naturally of considerable magnitude, is worthy of statistical presentation. That for butter, cheese, and milk is as follows:—

INTERSTATE TRADE IN BUTTER AND CHEESE, 1909.

State.	Imports from other States of the C'wealth.		Exports to other States of the Commonwealth.		Net Interstate Exports.[1]	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
BUTTER.						
	lbs.	£	lbs.	£	lbs.	£
New South Wales	1,971,174	95,543	6,474,469	305,825	4,503,295	210,282
Victoria	3,228,836	147,024	5,199,113	255,604	1,970,277	108,580
Queensland	5,680	269	1,822,028	85,870	1,816,348	85,601
South Australia	1,416,603	68,107	1,262,038	59,647	— 154,565	— 8,460
Western Australia	7,053,279	339,590	1,120	55	—7,052,159	—339,535
Tasmania	1,546,582	76,117	463,386	19,649	—1,083,196	— 56,468
CHEESE.						
	lbs.	£	lbs	£	lbs.	£
New South Wales	927,070	24,183	323,383	9,561	— 603,687	— 14,622
Victoria	495,281	12,709	986,885	31,431	491,604	18,722
Queensland	20,492	701	1,050,293	25,728	1,029,801	25,027
South Australia	21,444	774	172,350	5,012	150,906	4,238
Western Australia	1,174,974	36,227	18,134	580	—1,156,840	— 35,647
Tasmania	124,698	3,271	212,909	5,553	88,216	2,282

1. — signifies net imports.

It will be observed from the column of net exports that in 1909 New South Wales occupied the leading position as supplier of butter, and Queensland as supplier of cheese, whilst Western Australia was the chief interstate importer of these products.

INTERSTATE TRADE IN MILK AND CREAM, 1909.

State.	Imports from other States of the Commonwealth.		Exports to other States of the Commonwealth.		Net Interstate Exports.[1]	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
MILK AND CREAM—CONCENTRATED.[2]						
	lbs.	£	lbs.	£	lbs.	£
New South Wales ...	33,868	911	255,367	4,492	221,499	3,581
Victoria	124,883	2,801	533,096	9,401	408,213	6,600
Queensland	12,275	249	85,058	1,998	72,783	1,749
South Australia ...	58,188	1,288	30,687	833	— 27,501	— 455
Western Australia ...	384,499	6,364	9,156	219	— 375,343	— 6,145
Tasmania	300,359	5,344	708	14	— 299,651	— 5,330
MILK AND CREAM—PRESERVED.[2]						
	lbs.	£	lbs.	£	lbs.	£
New South Wales ...	2,583,040	51,522	349,120	7,158	— 2,233,920	— 44,364
Victoria	616,051	12,504	1,796,630	36,457	1,180,579	23,953
Queensland	94,571	1,856	3,883,696	75,188	3,789,125	73,332
South Australia ...	600,292	11,638	437,899	9,356	— 162,393	— 2,282
Western Australia ...	2,203,607	42,865	34,679	721	— 2,168,928	— 42,144
Tasmania	420,862	8,831	16,399	336	— 404,463	— 8,495

1. — signifies net imports. 2. See definition on page 447.

New South Wales and Western Australia are large importers of preserved milk from other States of the Commonwealth, Queensland and Victoria being the chief suppliers. There was practically no interstate trade in fresh milk and cream in 1909.

7. **Local Consumption of Butter and Cheese.**—The total production of butter and cheese, with the net export or import subtracted or added, gives approximately the consumption in the Commonwealth. In the period considered hereunder, 1907 was the only year in which the local supply of cheese was adequate:—

BUTTER AND CHEESE LOCALLY CONSUMED, 1905 to 1909.

Product.	1905	1906.	1907.	1908.	1909.
	lbs.	lbs.	lbs.	lbs	lbs.
Butter ... Total	85,013,391	84,201,904	90,324,640	94,151,872	93,652,376
,, ... Per head of mean population ...	21.2	20.6	21.7	22.2	22.8
Cheese ... Total	13,346,140	14,900,794	13,579,382	15,173,007	15,938,864
,, ... Per head of mean population ...	3.3	3.6	3.3	3.6	3.7

The consumption in 1909 was, therefore, equal to 22.8 lbs. of butter and 3.7 lbs. of cheese per head of mean population, an amount probably unsurpassed anywhere. The consumption of butter and cheese in the United Kingdom is given as 19 lbs. per head, and is therefore only equal to about three-fourths of that of the Commonwealth.

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§ 3. Pigs, Bacon, etc.

1. **Pigs.**—The pigs in Australasia numbered 43 in 1792; 4017 in 1800; 8992 in 1810; 33,906 in 1821; 66,086 in 1842; and 121,035 in 1851. The figures for each State in subsequent census years, and in the last five years, were as follows:—

NUMBER OF PIGS, COMMONWEALTH, 1861 to 1909.

State.	1861.	1871.	1881.	1891.	1905.	1906.	1907.	1908.	1909.
New South Wales ...	146,091	213,193	213,916	253,189	310,702	243,370	216,145	215,822	237,849
Victoria	43,480	177,447	239,926	286,780	273,682	220,452	211,002	179,358	217,921
Queensland	7,465	32,707	56,438	122,672	164,087	138,282	133,246	124,749	124,803
South Australia	69,286	95,542	120,718	83,797	119,005	112,277	93,605	81,165	81,797
Western Australia	11,984	14,265	22,530	25,930	74,567	56,203	53,399	46,652	47,062
Tasmania	40,841	52,863	49,660	73,520	72,810	42,985	46,704	47,943	55,705
Commonwealth ...	319,147	586,017	703,188	845,888	1,014,853	813,569	754,101	695,689	765,137

The number of pigs was highest in 1904, when for the first time it was over a million; prior to 1899 it had never reached 900,000. That year, the two immediately following, and 1904 and 1905 mark the highest totals. An examination of the States' returns shews remarkable fluctuations. It will be noticed that in no State was the number as high in 1906 as in the preceding year, and in Tasmania alone was the figure for 1907 higher than that for 1906. A similar experience was met in 1908. In several States the falling-off over the three years is very marked. In 1909 a remarkable recovery in the figures is shewn, increases over 1908 being large in New South Wales, Victoria, and Tasmania. The number of pigs per head of population, and the number per square mile, will be found in the tables of live stock, pages 335 and 336.

2. **Bacon and Ham.**—From 1905 to 1908, the production of bacon and ham in the Commonwealth shewed little annual variation. In 1909, however, there was a considerable falling-off. It will be noticed from the table above that the number of pigs in Australia in 1908 was much below the average.

PRODUCTION OF BACON AND HAM, COMMONWEALTH, 1905 to 1909.

State.	1905.	1906.	1907.	1908.	1909.
	lbs.	lbs.	lbs.	lbs.	lbs.
New South Wales ...	11,652,440	11,843,595	10,358,526	9,488,299	9,931,377
Victoria	16,433,665	18,051,166	17,545,720	14,411,401	13,620,485
Queensland	10,500,335	10,846,959	10,015,008	11,324,323	9,228,317
South Australia ...	‡	‡	2,311,004	3,392,162	3,348,050
Western Australia ...	401,447	272,494	209,419	152,896	120,623
Tasmania*	446,714	151,700	279,504	1,333,856	1,526,115
Commonwealth† ...	39,434,601	41,165,914	40,719,181	40,102,937	37,774,967

* Prior to 1908 Tasmanian statistics relate only to quantities made in factories. † The totals for the Commonwealth here given are exclusive of Tasmanian bacon and ham made elsewhere than in factories, prior to 1908, and of all South Australian bacon and ham prior to 1907. ‡ Information not available.

3. **Oversea Trade in Pig Products.**—The oversea trade in pigs and pig products is shewn in the following tables:—

IMPORTS, EXPORTS, AND NET EXPORTS OF BACON AND HAM, FROZEN PORK, PIGS, AND LARD, COMMONWEALTH, 1905 to 1909.

Particulars.		1905.	1906.	1907.	1908.	1909.
BACON AND HAM.						
Imports	lbs.	162,715	194,059	237,644	273,922	244,903
,, ...	£	5,807	7,171	9,625	10,013	9,384
Exports	lbs.	492,076	532,851	420,819	391,820	403,801
,, ...	£	15,262	18,467	17,579	18,360	18,979
Net Exports	lbs.	329,361	338,792	183,175	117,898	158,898
,, ...	£	9,455	11,296	7,954	8,347	9,595
FROZEN PORK.						
Imports	lbs.	154,052	139,363	187,479	110,647	109,620
,, ...	£	4,039	3,717	5,312	3,329	3,301
Exports	lbs.	2,824,016	3,472,224	1,446,758	826,102	394,559
,, ...	£	47,596	60,936	28,406	20,446	9,318
Net Exports	lbs.	2,669,964	3,332,861	1,259,279	715,455	284,939
,, ...	£	43,557	57,219	23,094	17,117	6,017
PIGS.						
Imports	No.	64	24	7	39	31
,, ...	£	814	1,269	69	968	1,177
Exports	No.	322	220	185	117	229
,, ...	£	399	263	383	297	460
Net Exports[1]	No.	258	196	178	78	198
,, ...	£	— 415	— 1,006	314	— 671	— 717
LARD.						
Imports	lbs.	45,702	64,561	36,625	313,060	358,213
,, ...	£	924	1,294	980	7,681	9,148
Exports	lbs.	1,064,562	551,268	458,327	511,774	1,618,995
,, ...	£	16,163	8,373	8,554	10,906	28,948
Net Exports	lbs.	1,018,860	486,707	421,702	198,714	1,260,782
,, ...	£	15,239	7,079	7,574	3,225	19,800

1. — signifies net imports.

From 1901 to 1903 there was a considerable net import of bacon and ham, but for the following years there was a large net export. The local production of frozen pork and lard was for each of the years shewn more than sufficient for the local demand.

4. **Interstate Trade in Pig Products.**—The interstate trade in pigs, bacon and ham, frozen pork, lard, etc., in 1909 was as follows:—

INTERSTATE TRADE IN PIG PRODUCTS, 1909.

State.	Imports from other States of the C'wealth.		Exports to other States of the Commonwealth.		Net Interstate Exports.[1]	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
PIGS.						
	No.	£	No.	£	No.	£
New South Wales ...	64	198	1,866	3,206	1,802	3,008
Victoria	1,852	3,103	67	334	— 1,785	— 2,769
Queensland	29	139	16	103	— 13	— 36
South Australia ...	7	76	32	28	25	— 48
Western Australia ...	...	...	...	...	...	...
Tasmania	34	174	5	19	— 29	— 155
BACON AND HAM.						
	lbs.	£	lbs.	£	lbs.	£
New South Wales ...	2,662,930	101,745	414,794	14,955	— 2,248,136	— 86,790
Victoria	149,607	5,674	2,578,095	105,951	2,428,488	100,277
Queensland ...	137,411	5,415	2,557,907	90,910	2,420,496	85,495
South Australia ...	66,309	2,628	561,255	17,877	494,946	15,249
Western Australia ...	2,897,045	107,747	2,403	100	— 2,894,642	— 107,647
Tasmania	285,042	10,042	83,890	3,458	— 201,152	— 6,584
FROZEN PORK.						
	lbs.	£	lbs.	£	lbs	£
New South Wales ...	98,511	2,328	35,094	881	— 63,417	— 1,447
Victoria	26,496	615	26,455	637	— 41	22
Queensland ...	1,700	31	72,606	1,699	70,906	1,668
South Australia ...	4,263	130	30	1	— 4,233	— 129
Western Australia ...	20,287	499	722	23	— 19,565	— 476
Tasmania	...	...	16,350	362	16,350	362
LARD AND LARD OIL AND REFINED FATS.						
	lbs.	£	lbs.	£	lbs.	£
New South Wales ...	1,168,135	24,460	219,576	4,604	— 948,559	— 19,856
Victoria	275,200	4,333	565,071	13,795	289,871	9,462
Queensland ...	20,921	423	1,041,987	20,967	1,021,066	20,544
South Australia ...	66,489	1,716	342,569	7,029	276,080	5,313
Western Australia ...	563,898	12,338	2,482	48	— 561,416	— 12,290
Tasmania	185,878	4,149	108,836	976	— 77,042	— 3,173

1. — signifies net imports.

5. **Local Consumption of Bacon and Ham.**—From 1904 to 1909 the production of bacon and ham was sufficient to meet the local demand, and there was a surplus for export, but in 1901, 1902, and 1903 this was otherwise, and considerable quantities were imported.

BACON AND HAM LOCALLY CONSUMED, 1905 to 1909.

Consumption.[1]	1905.	1906.	1907.	1908.	1909.
	lbs.	lbs.	lbs.	lbs.	lbs.
Total	39,105,240	40,827,122	40,536,006	39,985,039	37,616,069
Per head of mean population ...	10.7	11.0	9.8	9.4	8.7

1. This excludes South Australia in 1905 and 1906, for which no figures of production were available.

The total dairy production of the Commonwealth in 1909 is shewn below :—

TOTAL DAIRY PRODUCTION, COMMONWEALTH, 1909.

Where Produced.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
MILK.							
	gallons.	gallons.	gallons.	gallons.	gallons.	gallons.	gallons.
On Dairy & other Farms	201,183,337	162,994,658	70,642,888	29,778,032	4,893,446	11,600,000*	481,092,361
BUTTER.							
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
In Factories	58,025,559	49,554,628	22,385,086	4,815,322	†	1,226,757	136,007,354§
On Dairy & other Farms	4,840,049	5,611,927	2,207,623	3,666,846	414,453‡	1,525,000*	18,265,898¶
Total	62,865,608	55,166,555	24,592,711	8,482,168	414,453	2,751,757*	154,273,252
CHEESE.							
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
In Factories	3,248,515	3,167,955	3,523,749	1,573,275	...	342,290	11,855,754
On Dairy & other Farms	1,526,753	1,857,879	138,748	5,133	1,570	389,000*	3,919,083
Total	4,775,268	5,025,834	3,662,497	1,578,378	1,570	731,290*	15,774,837
CONDENSED OR CONCENTRATED MILK.							
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
In Factories	2,400,687	3,487,312	7,038,202	...	...	...	12,926,201
BACON AND HAM.							
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
In Factories	7,856,466	11,245,195	8,330,406	2,346,681	...	671,115	30,449,863
On Dairy & other Farms	2,074,911	2,375,290	897,911	1,001,369	120,623	855,000*	7,325,104
Total	9,931,377	13,620,485	9,228,317	3,348,050	120,623	1,526,115*	37,774,967

* Estimated. † Not available for publication. ‡ Including factory butter. § Exclusive of Western Australia. ¶ Including Western Australian factory butter.

§ 4. Poultry Farming.

1. **Development of the Industry.**—Until recently, poultry farming as a well organised industry could scarcely be said to exist, although in metropolitan and suburban districts poultry has of course long been kept for the table and egg supplies. The aggregate output, though considerable, represented relatively little value beyond the cost of production, owing to imperfect management. Many farmers also, both wheat-growers and dairymen, have maintained a large poultry stock, erecting poultry yards constructed on modern principles, and feeding from the stubble fields and waste grain with a minimum expenditure in tending. This brought about a considerable addition to the net agricultural or dairying return. The poultry industry during recent years has assumed an independent position among rural industries, notwithstanding that large numbers of poultry runs on wheat and dairy farms are still maintained; poultry farming is also carried on in conjunction with pig farming. In special poultry farms, breeding on scientific principles and a proper arrangement of the runs is secured, feeding and reproduction are technically attended to, and proper shelter is provided either by means of trees or sheds. Poultry experts are engaged by the State Governments to instruct in matters that will amplify the returns. Poultry for consumption is extensively reared, and the egg-producing qualities of the birds have also been greatly improved by careful breeding. Egg collecting circles have been formed in some country districts, to develop, under Government supervision and with Government aid until the organisation is self-supporting, the industry on co-operative lines. A member of the circle is elected to act as

secretary, and he receives all the eggs from the members, tests, packs, and forwards them to the metropolitan depôt for shipment. Only clean and fresh eggs are to be delivered to the secretary under penalty of fine and expulsion from the circle. Another method of collecting and marketing the eggs is through the local butter factories, where eggs are delivered by the suppliers of milk and cream a number of times each week.

2. **Production of Poultry.**—Figures for the yield of poultry products are difficult to obtain. The following values are returned :—

ESTIMATED VALUE OF POULTRY AND EGGS. COMMONWEALTH, 1908-9 and 1909-10.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
1908-9 ...	1,202,000	1,547,000	*	399,349	133,544	*	3,281,893†
1909-10 ...	1,309,000	1,570,000	185,000	431,575	160,562	*	3,656,137‡

* Not available. † Excluding Queensland and Tasmania. ‡ Excluding Tasmania.

3. **Oversea Trade in Poultry Products.**—The imports and exports of eggs shew a considerable balance on the side of imports in each of the years 1901 to 1906 and in 1909. In 1907 the export considerably exceeded the import, and in 1908 the imports were greater in quantity, but less in value, than the exports. In 1909, the balance, both in number and value, was on the side of exports. The figures for frozen poultry shew that a considerable oversea trade is carried on.

IMPORTS, EXPORTS, AND NET EXPORTS OF EGGS AND LIVE AND FROZEN POULTRY, COMMONWEALTH, 1905 TO 1909.

Particulars.	1905.	1906.	1907.	1908.	1909.
EGGS.					
Imports ... ... doz.	84,517	83,925	60,114	31,247	38,931
„ ... ... £	1,943	2,184	1,791	856	1,007
Exports ... ... doz.	23,041	38,090	88,684	17,261	10,527
„ ... ... £	1,199	1,718	3,421	1,082	713
Net exports[1] ... ... doz.	—61,476	—45,835	28,570	— 13,986	— 28,404
„ „ ... ... £	— 744	— 466	1,680	226	— 294
LIVE POULTRY.					
Imports ... ... No.	1,417	3,220	2,883	2,372	1,862
„ ... ... £	1,984	1,747	957	633	944
Exports ... ... No.	4,000	2,806	3,280	2,290	4,708
„ ... ... £	1,863	1,767	1,248	1,043	1,475
Net exports[1] ... ... No.	2,583	— 414	397	— 82	2,846
„ „ ... ... £	— 121	20	291	410	531
FROZEN POULTRY.					
Imports ... ... lbs.	22,628	8,949	1,452	2,242	3,565
„ ... ... £	899	331	43	75	100
Exports ... ... pair	46,987	34,655	31,261	22,444	5,828
„ ... ... £	11,765	9,506	8,556	7,335	3,127
Net exports	[2]	[2]	[2]	[2]	[2]
„ „ ... ... £	10,866	9,175	8,513	7,260	3,027

1. — signifies net imports. 2. Quantity not available.

4. **Interstate Trade in Poultry Products.**—South Australia is the largest supplier to the other States of the Commonwealth of poultry products generally, but Victoria has the largest interstate market for frozen poultry. New South Wales and Western Australia are the chief interstate importers.

INTERSTATE TRADE IN POULTRY AND POULTRY PRODUCTS, 1909.

State.	Imports from other States of the Commonwealth.		Exports to other States of the Commonwealth.		Net Interstate Exports.[1]	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
LIVE POULTRY.						
	No.	£	No.	£	No.	£
New South Wales	40,017	3,634	1,308	798	— 38,709	— 2,836
Victoria ...	790	624	825	440	35	— 184
Queensland ...	834	527	195	133	— 639	— 394
South Australia ...	64	75	40,309	3,909	40,245	3,834
Western Australia	665	249	39	65	— 626	— 184
Tasmania ...	393	275	87	39	— 306	— 236
FROZEN POULTRY.						
	lbs.	£	lbs.	£	lbs.	£
New South Wales	16,175	478	4,405	263	— 11,770	— 215
Victoria ...	3,818	251	92,510	3,786	88,692	3,535
Queensland ...	...	...	1,902	58	1,902	58
South Australia ...	1,553	40	2,618	92	1,065	52
Western Australia	79,929	3,431	...	...	— 79,929	— 3,431
Tasmania ...	...	...	40	1	40	1
EGGS.						
	Dozen.	£	Dozen.	£	Dozen.	£
New South Wales	1,012,840	43,563	20,364	905	— 992,476	— 42,658
Victoria ...	649,951	27,447	31,399	1,700	— 618,552	— 25,747
Queensland ...	34	6	176,160	6,671	176,126	6,665
South Australia ...	1,332	112	2,394,397	110,414	2,393,065	110,302
Western Australia	933,919	47,311	...	...	— 933,919	— 47,311
Tasmania ...	27,859	1,390	3,615	139	— 24,244	— 1,251

1. — signifies net imports.

§ 5. Bee Farming.

1. **The Bee-farming Industry.**—Bee farming, like poultry farming, has ordinarily been an adjunct to agricultural or dairying industries, and can hardly yet be said to have been organised as a distinct industry. The returns collected shew that, while production varies greatly, there is on the whole a fair improvement, to which the large increase in the Western Australian product since 1902 has considerably contributed. The annual average returns of honey from the hives range between 20 lbs. and 600 lbs. per hive.

The value of the export of honey from Australia was only £1541 in 1907, £3361 in 1908, and £2675 in 1909. It is believed that this export could be considerably increased. Australian honey exhibited in the Franco-British Exhibition in London in 1908, obtained

the highest award. It has been proved that there is no eucalyptus flavour in Australian honey, and the prejudice against it on that account is ill-founded.

2. **Production of Honey and Beeswax.**—The particulars of honey production, available up to 1907 for only three States, are as given below :—

NUMBER OF HIVES AND PRODUCTION OF HONEY AND BEESWAX, 1905 to 1907.

Particulars.		1905.	1906.	1907.
New South Wales	Hives ... No.	64,730	48,632	...
" "	Honey ... lbs.	3,023,468	1,841,236	1,907,744
" "	Beeswax ... lbs.	58,610	39,620	34,690
Victoria	Hives ... No.	49,120	41,780	48,005
"	Honey ... lbs.	1,906,188	1,209,144	2,965,299
"	Beeswax ... lbs.	28,653	21,844	46,780
Western Australia	Hives ... No.	12,837	12,825	...
" "	Honey ... lbs.	287,498	555,079	382,584
" "	Beeswax ... lbs.	6,211	9,303	8,302

The figures for the years ended 31st March, 1908, 1909, and 1910 for all States except Tasmania, where the information was not collected, are as follows :—

HIVES, etc., 1908, 1909 and 1910.

State.	Bee Hives.			Honey Produced.		Beeswax Produced	
	Productive	Unproductive.	Total.	Quantity.	Value.	Quantity.	Value.
1908.	No.	No.	No.	lbs.	£	lbs.	£
New South Wales	53,240	15,148	68,388	2,660,363	27,700	48,427	2,700
Victoria ...	27,505	15,707	43,212	1,138,992	13,050	24,521	1,330
Queensland ...	10,366	3,956	14,322	442,827	3,993	8,554	402
South Australia ...	18,529	5,101	23,630	953,395	8,938	12,854	696
Western Australia	9,881	2,140	12,021	255,489	3,726	6,454	565
Commonwealth*	119,521	42,052	161,573	5,451,066	57,407	100,810	5,693
1909.							
New South Wales	53,602	16,344	69,946	3,064,526	31,920	58,697	3,420
Victoria ...	†	†	40,595	2,373,628	26,544	38,674	1,934
Queensland ...	10,999	3,283	14,282	445,432	4,119	9,707	492
South Australia ...	19,549	4,471	24,020	1,007,717	10,497	12,063	603
Western Australia	13,928	2,631	16,559	309,109	3,122	6,217	466
Commonwealth*	†	†	165,402	7,200,412	76,202	125,358	6,915
1910.							
New South Wales	46,813	17,986	64,799	2,066,330	25,800	53,006	3,100
Victoria ...	32,914	9,718	42,632	1,611,284	18,463	22,369	1,305
Queensland ...	11,322	3,135	14,457	548,171	5,224	11,849	605
South Australia ...	17,551	6,450	24,001	812,487	8,463	10,059	503
Western Australia	10,902	2,837	13,739	409,345	4,264	9,841	574
Commonwealth*	119,502	40,126	159,628	5,447,617	62,214	107,124	6,087

* Exclusive of Tasmania. † Not available.

3. **Oversea Trade in Bee Products.**—Both honey and beeswax are produced in the Commonwealth in sufficient quantities to supply all local requirements, and a considerable quantity of each is sent oversea.

IMPORTS, EXPORTS, AND NET EXPORTS OF HONEY AND BEESWAX, COMMONWEALTH, 1905 TO 1909.

Particulars.	1905.	1906.	1907	1908.	1909.
HONEY.					
Imports ... ... lbs.	12,036	2,618	2,716	9,315	9,842
,, ... £	138	27	35	98	249
Exports ... ... lbs.	112,039	58,297	102,047	226,465	168,953
,, ... £	1,333	1,001	1,541	3,361	2,675
Net exports ... ... lbs.	100,003	55,679	99,331	217,150	159,111
,, ,, ... £	1,195	974	1,506	3,263	2,426
BEESWAX.					
Imports ... ... lbs.	9,767	13,725	14,070	7,527	19,041
,, ... £	593	787	978	460	1,112
Exports ... ... lbs.	86,720	30,570	27,086	41,177	35,540
,, ... £	4,863	1,768	1,618	2,479	2,064
Net exports ... ... lbs.	76,953	16,845	13,016	33,650	16,499
,, ,, ... £	4,270	981	640	2,019	952

4. **Interstate Trade in Bee Products.**—The interstate trade in honey and beeswax in 1909 is given below:—

INTERSTATE TRADE IN BEE PRODUCTS, 1909.

State.	Imports from other States of the C'wealth.		Exports to other States of the Commonwealth.		Net Interstate Exports.[1]	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
HONEY.						
	lbs.	£	lbs.	£	lbs.	£
New South Wales ...	175,380	2,179	21,089	283	—154,291	—1,896
Victoria	57,060	748	244,657	4,492	187,597	3,744
Queensland	40,371	812	16,434	213	— 23,937	+ 599
South Australia ...	4,222	62	202,069	2,619	197,847	2,557
Western Australia ...	115,190	2,265	9,701	106	—105,489	—2,159
Tasmania	101,947	1,650	220	3	—101,727	—1,647
BEESWAX.						
	lbs.	£	lbs	£	lbs.	£
New South Wales ...	4,250	264	5,574	272	1,324	8
Victoria	6,104	286	2,932	205	— 3,172	— 81
Queensland	262	24	604	29	342	5
South Australia ...	66	3	1,826	106	1,760	103
Western Australia ...	334	21	...	...	— 334	— 21
Tasmania	218	19	298	5	80	— 14

1. — signifies net imports.

§ 6. Summary of Australian Farmyard and Dairy Products Exported, 1905 to 1909.

The quantities and values of Australian farmyard and dairy products exported from the Commonwealth during each of the years 1905 to 1909 are shewn below:—

QUANTITIES OF AUSTRALIAN FARMYARD AND DAIRY PRODUCTS EXPORTED FROM THE COMMONWEALTH DURING EACH OF THE YEARS 1905 to 1909.

Products.	1905.	1906.	1907.	1908.	1909.
Beeswax ... ... lbs.	85,541	30,471	27,058	41,177	35,540
Butter ... ... ,,	55,904,151	75,765,536	66,076,915	51,193,311	55,644,925
Cheese ... ... ,,	172,896	246,631	491,209	131,001	193,204
Eggs, albumen and yolk	*	*	*	*	*
Eggs ... ... doz.	21,293	37,900	88,615	17,113	10,359
Feathers, undressed	*	*	*	*	*
Honey ... ... lbs.	112,039	58,297	102,047	226,465	168,953
Lard ... ... ,,	1,062,966	550,021	458,059	511,016	1,617,442
Meats—					
Bacon and ham ... ... ,,	484,616	530,459	415,251	389,718	396,342
Frozen poultry ... ... pair	45,757	33,833	31,261	22,444	5,828
,, pork ... ... lbs.	2,824,016	3,472,224	1,446,758	826,102	394,559
Milk, concentrated and preserved ... ,,	310,797	171,639	162,367	139,165	169,310
Pigs, living ... ... No.	322	220	185	117	229
Poultry, living ... ... ,,	3,993	2,806	3,280	2,290	4,708

* Quantity not available.

VALUE OF AUSTRALIAN FARMYARD AND DAIRY PRODUCTS EXPORTED FROM THE COMMONWEALTH DURING EACH OF THE YEARS 1905 to 1909.

Products.	1905.	1906.	1907.	1908.	1909.
	£	£	£	£	£
Beeswax	4,791	1,761	1,617	2,479	2,064
Butter	2,331,595	3,238,304	2,890,261	2,386,548	2,399,693
Cheese	4,703	6,662	12,733	4,305	5,337
Eggs, albumen and yolk	...	...	...	535	4
Eggs	1,138	1,710	3,419	1,074	706
Feathers, undressed	3,332	1,902	2,610	2,636	2,244
Honey	1,333	1,001	1,541	3,361	2,675
Lard	16,120	8,346	8,547	10,884	28,876
Meats—					
Bacon and ham	14,943	18,374	17,348	18,258	18,682
Frozen poultry	11,515	9,291	8,556	7,335	3,127
,, pork	47,596	60,936	28,406	20,446	9,318
Milk, concentrated and preserved ...	5,296	3,386	2,924	3,139	3,319
Pigs, living	399	263	383	297	460
Poultry, living	1,851	1,767	1,248	1,043	1,475
Total	2,444,612	3,352,803	2,979,593	2,462,340	2,477,980

§ 7. British Imports of Dairy Products.

1. **Value of Britain's Imports of Dairy Products.**—Great Britain pays annually considerably more than £22,000,000 for imported butter; £7,000,000 for imported cheese; £17,000,000 for bacon and ham; and £1,000,000 for pork.

2. **Butter.**—Australia in 1909 stood fourth in the value of butter imported into the United Kingdom, but the import of other Australian dairy products was inconsiderable.

IMPORTS OF BUTTER INTO THE UNITED KINGDOM, 1909.

Country from which Imported.	Quantity.	Value.	Country from which Imported.	Quantity.	Value.
	Cwt.	£		Cwt.	£
Denmark	1,764,027	10,233,370	Argentine Republic	73,553	392,014
Russia	601,712	3,001,764	Norway... ...	29,476	163,866
France	413,306	2,318,887	Canada	22,522	120,083
Australia... ...	396,986	2,007,677	Other Countries ...	21,940	116,825
Sweden	312,142	1,801,095			
New Zealand ...	278,581	1,472,219			
Netherlands ...	148,567	797,162	Total ...	4,062,812	22,424,962

In October, 1907, a falling-off of imports of Australian butter into Great Britain was noticed, with the result that, three months later, there was a heavy shortage, and a "butter boom" ensued in London, prices rising rapidly, until a limit was reached with 156s. per cwt., the highest recorded for Australasian butter. After a short period of high values in February, 1908, prices steadied at 116s., and then gradually fell to 104s. in the middle of May, when European grass-fed butter was ready for the British market. Prices in London in 1909 were of higher average than in any previous year since the Australian export trade was instituted twenty years ago.

3. **Cheese.**—The value of the British cheese import in 1909 was £6,800,000, of which four and a-half million pounds worth was received from Canada. The import from Australia was practically *nil*. Small experimental shipments were, however, made in 1908 and 1909, and a fair price was realised.

4. **Bacon and Ham.**—Of a total import of bacon and ham valued in 1909 at £16,914,600, Great Britain received goods to the value of £9,010,000 from the United States; £5,802,000 from Denmark; and £1,518,000 from Canada. The British import from Australia was *nil*.

5. **Pork.**—The total value of British imports of fresh pork (including refrigerated and frozen) was £1,023,000 in 1909. Of this the value of Australian products was *nil*, whilst from the Netherlands pork valued at nearly £1,000,000 was imported.

6. **Other Products.**—There is practically no British import from Australia of honey, beeswax, poultry, game, lard, or eggs, but rabbits to the value of £506,000 were received from the Commonwealth in 1909.

§ 8. Graphical Representation of Dairy Production.

Two graphs shewing respectively the increase in dairy production and in the exports of butter will be found on page 360.

SECTION X.

FORESTS, FORESTRY, AND FORESTAL PRODUCTS.

§ 1. The Forests of Australia.

1. **Extent of Forests.**—Although no definite survey of forest lands has been made on a uniform basis for the different States of Australia, the following table gives the results of careful estimates made for each State :—

FOREST RESERVES AND FOREST AREAS, STATES AND COMMONWEALTH, 1909.

State.	Specially Reserved for Timber.	Total Forest Area.	Percentage of State Area.		Percentage of Commonwealth Area.	
			Specially Reserved	Total Forest.	Specially Reserved	Total Forest.
	Acres.	Acres.	%	%	%	%
New South Wales	7,690,771	15,000,000	3.88	7.55	0.40	0.78
Victoria ...	3,989,790	11,800,000	7.10	20.98	0.21	0.62
Queensland ...	3,817,353	40,000,000	0.89	9.32	0.20	2.10
South Australia ...	155,232	3,800,000	0.03	0.66	0.01	0.20
Western Australia	52,900	20,400,000	0.01	3.27	0.003	1.07
Tasmania ...	997,454	11,000,000	5.95	65.56	0.05	0.58
Commonwealth	16,703,500	102,000,000	—	—	0.88	5.35

The actual area of wooded land is probably in all cases much greater than shewn above. For example, that of Western Australia is estimated at 97,900,000 acres; Queensland has probably 143,000,000 acres; and Victoria has a considerable extent of "Mallee" country not included in the above estimate. The basis of estimation for each State in any case cannot be regarded as quite identical. Considerable areas not included as forest lands possess timber of local value.

The absolute and relative forest areas of Australia and other countries are shewn in the table on the next page.

In each of the States areas have been set apart as State forests and "timber reserves," in some cases the reservation being made in perpetuity, in others for a definite period, in others again the reservation may be cancelled at any time. The characteristics of the forest areas of the different States are referred to seriatim.

RELATIVE AREAS OF FOREST LANDS, AUSTRALIA AND OTHER COUNTRIES, 1909.

Country.	Total Forest Area.	Percentage of Total Area.	Country.	Total Forest Area.	Percentage of Total Area.
	Sq. Miles.	%		Sq. Miles.	%
Australian C'wealth	**159,375**	**5.35**	Rumania ...	4,312	8.50
New Zealand ...	26,678	25.65	Sweden	90,241	52.20
United Kingdom ...	4,800	3.96	Norway	26,230	21.13
France	32,407	15.65	Russia in Europe	859,375	43.04
Algeria	9,620	2.80	United States	1,000,000	33.67
Germany	54,015	25.90	Canada	836,000	22.33
Switzerland ...	3,290	20.60	Cape of Good Hope	537	0.19
Italy	15,796	14.29	British India ...	128,566	11.72
Austria	37,700	31.66	Japan	28,450	19.00
Hungary	34,775	27.72			

2. **Characteristics of State Forest Areas.**—(i.) *New South Wales.* Great diversity exists in the more dense distribution of timber trees in the coastal region, between the range and the Pacific Ocean. The areas of natural forest, however, are found in nearly every part of the State except the wide plains of the Murrumbidgee, Lachlan, and Darling districts, the level surface of which is chiefly covered with salt bush, scrub, and indigenous grasses, while the tree-growth is, as a rule, confined to belts of red gum, box, sheoak, and myall along the courses of the rivers and their tributaries, and to groves of cypress pine at intervals. The tree-clad regions of the State may be divided into open, brush, and scrub forests. The first class has the widest distribution, being found in every geological formation, and including some of the finest timbers, such as many species of eucalyptus, angophora, and other genera of the natural order of myrtles. Among the hardwoods, red gum usually marks the courses of streams, while on the rough and stony mountain and hill ridges, with their sheltered gorges, are found several varieties of ironbark, blackbutt, tallowwood, spotted gum, grey box, red mahogany, forest red gum, Sydney blue gum, and turpentine. The brush or jungle forests occupy a considerable tract of country between the Dividing Range and the coast. In this region, interspersed occasionally with large Moreton Bay and other figs, fern trees, cabbage trees, and palms, grow some of the most beautiful timbers known for cabinet work and veneers, such as the red cedar, rosewood, silky oak, beech, red bean, beefwood, tulipwood, and coachwood. In addition to these, there are considerable supplies of the colonial or hoop pine, and the brown or berry pine. The scrub forests are represented by the red or black and white varieties of the cypress pine, and many species of acacia and eucalyptus. These are chiefly situated in the western portion of the State, and although the pines and some of the eucalypts are useful for local building and fencing, the bulk of the timber is of little commercial value.

(ii.) *Victoria.* The mountain ranges, principal of which are the Dividing Range and the Australian Alps, constitute the true forest regions of the country, the trees attaining considerable height and girth, and the brush or scrub growth great luxuriance. The lower elevations of the ranges, remote from settlement, are densely wooded to their summits, but the peaks above the winter snow-line are either bare or covered only with dwarfed vegetation. Dense and luxuriant forests characterise the Otway Ranges and Gippsland, south of the Main Divide. The tree-growth in the Grampians consists chiefly of stringy-bark, white gum, grey and yellow box, and white ironbark, with some red gum and wattle. In the Pyrenees there are more valuable hardwoods, chiefly blue gum and messmate, with stringy-bark, grey and yellow box, red and white ironbark on the lower levels. In Wombat Forest, extending along both sides of the Dividing Range from Creswick to Mount Macedon, the timber is almost wholly young messmate of good quality, with peppermint and swamp gum. Further eastward along the range messmate

and stringy-bark prevail, with grey and yellow box and ironbark on the low country. In Delatite, and in the lower ranges of the Australian Alps generally, the timber increases in height and girth, and includes blue gum, messmate, and peppermint of fine quality, with ribbon gum, woollybutt, and silvertop on the higher levels, and grey and yellow box with stringy-bark along the lower slopes and valleys. The northern plains, extending westward from Wodonga to the Grampians, are thinly covered with open forests, the limits of the prevailing trees being defined in clearly-marked belts. Thus the main belt of red gum follows the course of the Murray and extends along the valleys of its tributaries, but is interspersed at intervals near the river with sand ridges bearing grey box and cypress pine. Southward of this belt, and between the streams, the prevailing trees are grey or yellow box, with red and white gum and stringy-bark on the low ridges. From Chiltern a line drawn westward through Rushworth, Heathcote, Bendigo, Dunolly, and St. Arnaud marks a long belt of ironbark, of both red and white varieties, interspersed with stringy-bark and grey or yellow box. In the north-west, between the Wimmera Plains and the Murray, the dwarf eucalypt known as the mallee scrub covers the plains, with belts of cypress pine at intervals, and red gum and box along the courses of streams and lakes. The south-west is poorly timbered, the prevailing tree being stringy-bark, with red gum along the streams, and white gum, box, lightwood, and honeysuckle on the plains and undulating country. In the Otway district are valuable timber forests; over 280 square miles are covered with blue gum, spotted gum, messmate, and mountain ash or blackbutt of fine quality, with some stringy-bark and white gum, while the valleys between the ridges bear valuable timber of fine grain such as blackwood, beech, satin box, olive, sycamore, and pencil cedar. Eastward of Melbourne, on the watershed of the Yarra, there is another fine forest region, the trees consisting of spotted gum, mountain ash, messmate, and white gum, with blackwood, beech, sassafras, and silver wattle in the valleys. The ranges of Southern Gippsland bear blue gum, spotted gum, mountain ash, and yellow stringy-bark, while in the western and northern portions of the same district grow the mountain stringy-bark, spotted gum, blackbutt, and the Gippsland mountain ash or silvertop, with woollybutt and ribbon gum on the higher elevations of the Main Divide. In the eastern part of the district, stretching from the Lakes towards the Genoa River, are found the Bairnsdale grey box, the Gippsland mountain ash or silvertop, white and yellow stringy-bark, red ironbark and bloodwood. The prevailing timber in this part of Gippsland is the white stringy-bark, which forms large forests from the foothills of the Divide to the sea-coast.

(iii.) *Queensland.* The extensive forests of Queensland yield a great variety of woods, esteemed for their strength, durability, or beauty. The principal merchantable timbers lie between the eastern seaboard and the Great Dividing Range, which runs roughly parallel to, and about 200 miles from the coast. At about the 21st parallel of south latitude, a spur runs westward nearly to the South Australian border, and bears on its crests and slopes much valuable timber. Forests are also found on the Denham, Johnstone, and Gilbert Ranges. The principal eucalypts are ironbark, grey, spotted, and red gum, blackbutt, and turpentine; Moreton Bay, brown, and Bunya Bunya pines represent the conifers; and red cedar, beech, tulipwood, rosewood, red bean, and black bean are among the brush timbers of fine grain. On the extensive plateaux west of the Divide there is but little timber; and towards the vast basin of the interior, the low ridges and banks of the short water-courses bear a growth of stunted eucalypts such as the gimlet gum, the desert sheoak, acacias, and mallee.

The chief supply of mill timber (eucalypts, Moreton Bay pine, etc.) is in the southern coastal region, from the New South Wales border as far north as Gladstone. In the regions between Rockhamption and Ingham the supply is not so plentiful; but northward of the latter town, the red cedar, kauri pine, and black bean are luxuriant. Large supplies of these valuable trees are found on the Barron Valley reserves, and in other localities between Ingham and Port Douglas. Inland from this zone of heavy forest is another, less densely timbered, bearing cypress and other pines, ironbarks and acacias. In the south-western regions of the State the cypress pine flourishes.

(iv.) *South Australia and Northern Territory.* The principal forest districts of South Australia proper are restricted largely to the hill ranges in the neighbourhood of Adelaide and Spencer Gulf, and the trees have not the fulness and lofty growth of those of the eastern and south-western borders of Australia. Red gum is widely distributed, though never far from water; and there are belts of timber where, from the general appearance of the surrounding country, they would hardly be expected. The stringy bark has its habitat principally in the hills, and is but rarely seen on the plains; other useful hardwoods are the white and blue gum and peppermint. Blackwood (in demand for cabinet work) is common in the south-east and along the eastern border, but is rare near Adelaide. Wattle also is cultivated for its gum and bark. Sheoak appears in districts less thickly forest-clad, and ti-trees inhabit low, damp situations. The sandalwood tree grows luxuriantly in Yorke Peninsula. On the great plains of the interior there is little vegetation, patches of forest country being occasionally found, while here and there fertile spots of grass land, but generally not of large extent, are met with. Groups of stunted shrubs, and small scattered trees—sheoak, eucalyptus, and wattle—mostly of limited extent, rise from the plains like islands.

In Central and Northern Australia there is little forest, until the hills where the waters of the northern river system take their rise are encountered. On the plains to the north of the McDonnell Ranges there is a thin clothing of mulga scrub, with gum trees marking the water-courses. Occasionally patches of heavier gum forests are met with. Stirling Creek is lined with the bean tree. The mulga scrub thickens, and with stunted and mallee gums furnishes a uniform vegetation as far north as Powell's Creek. Here, with red gums still lining the water-courses and flooded gums on the flats, the vegetation becomes more varied. On the ranges pines, fig trees, and orange trees (*capparis*) occur. Heavy timber clothes the uplands about the Roper River, and the tableland which stretches across the territory at a distance from the coast of from 30 to 100 miles bears large paperbark trees, Leichhardt pines, and palms. On the higher steppes there is also abundance of bloodwood and other varieties of eucalyptus, besides other kinds of trees. Many prominent fibre plants are native to the territory.

(v.) *Western Australia.* The coastal timber belt runs along the western shore from the Murchison River to the Leeuwin, and along the southern shore from that point to beyond Albany, clothing with trees the Victoria, Herschel, Darling, and Stirling Ranges. Pre-eminent among the trees of this State for strength and durability are the jarrah and karri. A great belt of the former stretches eastward of the Darling Range to upwards of 100 miles in breadth, with a length of 350 miles. Between this region and the coast are two well-marked belts of tuart and red gum. In the extreme south-west of the State the main karri belt stretches from Augusta to Albany. Eastward of the jarrah belt a strip of white gum encloses a narrow belt of York gum, its southern extremity almost reaching the coast, while its northern limit extends even beyond that of the jarrah tract. Still further east the forest thins, a poorer growth of white gum giving place to brushes, scrub, and dwarf trees. Along the shores of the Great Australian Bight there are stunted eucalypts, with casuarinas and wattle. In the north-west, on the King Leopold and St. George's Ranges, there are forest areas, but from Dampier Land to below Shark Bay there is no coastal forest, and in many cases the stunted bush and scrub lands infringe on the sea-coast.

(vi.) *Tasmania.* The Tasmanian forest consists chiefly of eucalypts, widely distributed over the island; and of conifers, such as the Huon, the King William, and the celery-top pines, flourishing in the western and southern parts. The principal hardwoods of the eucalypt family are the blue gum, stringy bark, peppermint, and silvertop ironbark, while among woods of fine grain are the blackwood, beech or myrtle, sassafras, native cherry, and sheoak. Black and silver wattles also inhabit various parts of Tasmania.

3. **Distribution of Timber in the Commonwealth Generally.**—The more conspicuous timber regions of Australia as a whole are the eastern and southern portions, including Tasmania, and, again, the south-western portion northwards and eastwards from Cape

Leeuwin. In regard to distribution, on the eastern side of the continent the largest timber is found on the crests and coastal slopes of the mountain ranges, but in the south-west, in addition to the vegetation between mountains and sea, a large area of forest stretches inland from the coastal ranges. The hills encircling Adelaide and Yorke and Eyre Peninsulas also bear good forest. The Kimberley district is timbered, and in the Northern Territory and round the shores of the Gulf of Carpentaria there are considerable forest areas. But the coastal regions of West and North-west Australia, except in the case of the districts named and the shores of the Great Australian Bight and Encounter Bay, are devoid alike of mountains and forests. The interior of the continent is thinly timbered, or almost destitute of vegetation, an occasional limited area of forest, generally in connection with mountain systems (though these themselves are scarce), acting as a relief in the landscape, which but for these presents to the eye all the features of a dreary and arid waste.

4. **The Timber Districts in New Zealand.**—Milling timbers occur chiefly in the Auckland district. Kauri, the finest New Zealand timber, is only found here; its gum is of considerable commercial value, and gives employment to large numbers of men. Totara, kahikatea, and rimu growths are also extensive. Other trees in less demand are tawa, beech, and puriri. The bulk of the timber in the Hawke's Bay district is rimu, with totara in lesser quantities. In Taranaki, rimu chiefly, kahikatea and totara are available for use. In Wellington, one-third of the available timber is rimu, the rest consisting of matai and tawa, with a little kahikatea and totara. Two-thirds of the timber in Marlborough is rimu, the remainder is composed of kahikatea, matai, and beech. In the Nelson district, four-fifths of the available milling timber is brown beech; there are also quantities of rimu, mostly in inaccessible country. Westland is the mainstay of the South Island; four-fifths of its milling timber is rimu, with kahikatea and totara making up the remainder. In Canterbury the chief timber is beech. The forest area of Otago is very small; rimu is the chief timber found, the others being matai and beech. In Southland there is a large quantity of milling timber, one-third of which is rimu, one-third beech, the remainder comprising kahikatea, matai, and totara.

§ 2. Forestry.

1. **Objects.**—Economic forestry, aiming at the conservation of forestal wealth by safeguarding forests against inconsiderate destruction, and by the suitable re-afforestation of denuded areas, is essential to the preservation of industries dependent upon an adequate supply of timber, and to the perpetuation of a necessary form of national wealth. Though in Australia large areas of virgin forests still remain, the inroads made by timber-getters, by agriculturists, and by pastoralists—who have destroyed large areas by "ringbarking"—are considerable; and it is not unlikely that climatological changes are caused thereby. For it would appear that variations in climate, and alternating periods of drought and flood, desiccation and erosion of soil, with loss or diminution of fertility, have resulted from forest denudation in countries bordering the Mediterranean. In many of the States of America diminished rainfall is said to have followed the destruction of large forest areas, and in Mauritius, clearing the hills of timber destroyed the even distribution of rainfall, causing floods and soil denudation. On the other hand beneficial consequences appear also to have followed on the planting of trees on denuded lands, or along encroaching coasts, and it is obvious that a forest covering tends to beneficially regulate the effects of rainfall.

Successful planting of exotics in various parts of the Commonwealth has demonstrated that the Australian climate is suitable for the cultivation of a large number of the most valuable and beautiful of the world's timber trees.

2. **Forestry Departments.**—Each State of the Commonwealth, excepting Tasmania, has organised a separate forestry department or branch of service specially charged with

forestal matters. Forest improvement work is carried on, areas of young forest being cleaned up by the felling and removal of stunted, diseased and suppressed growth, the burning of debris and the making of fire breaks. Provision is made for effective patrols in forest districts, to check the ravages caused by fires, often, it is believed, caused through carelessness. The following table gives a comparative indication of the attention paid to the subject, the particulars being those for 1909:—

STATE FORESTRY DEPARTMENTS, 1909.

Particulars.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	West. Aus.	Tas.
Designation of officer in charge	Director of Forests	Conservator of Forests	Director of Forests	Conservator of Forests	Insp.-Gen. of Forests.	*
Salaries of persons engaged in administration and control £	1,705†	2,475‡	6,710§	475	7,774	...
Salaries of technical experts, forest rangers, etc. ... £	10,257†	13,909		1,345		260
Incidental expenses ... £	251	373	888	317	1,600	...
No. of persons forming office staff	8	13	3	5	6	*
No. of persons forming field staff	67	65	5	17	26	*

* Administered by Lands Department. † Including travelling allowances. ‡ Including travelling and forage allowances. § Including proportion of salaries of Land Commissioners and Crown Land Rangers.

The revenue and expenditure of the State Forestry Departments from 1905-6 to 1909-10 are given below:—

REVENUE OF STATE FORESTRY DEPARTMENTS, 1905-6 to 1909-10.

State.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.
	£	£	£	£	£
New South Wales	42,738	50,397	56,048	57,593	66,030
Victoria	21,508	24,971	29,013	40,678	37,992
Queensland	11,576*	14,560*	22,236	27,880	35,200
South Australia	2,832	2,981	3,474	3,416	3,089
Western Australia	21,216	22,783	23,500	29,484	31,549
Tasmania	3,505	4,220	3,841	3,871	3,840
Commonwealth	103,375	119,912	138,112	162,922	177,700

* For calendar year ended previous 31st December.

EXPENDITURE ON STATE FORESTRY DEPARTMENTS, 1905-6 to 1909-10.

State.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.
	£	£	£	£	£
New South Wales	16,639	20,259	19,545	20,169	24,510
Victoria	21,974	21,108	18,754	27,066	27,230
Queensland	5,200	6,700	6,940	4,652	5,000
South Australia	6,445	6,801	7,542	10,171	16,411
Western Australia	5,785	6,270	6,271	8,755	10,110
Tasmania	469	426	424	1,492	260
Commonwealth	56,512	61,564	59,476	72,305	83,521

3. **Sylvicultural Nurseries and Plantations.**—The growing recognition of the necessity for systematic sylviculture has led to the creation in most of the States of a number of sylvicultural nurseries and plantations.

(i.) *New South Wales.* In this State a small forest nursery is maintained at Gosford, between Sydney and Newcastle, from which young trees are widely distributed throughout the State, the bulk being issued to municipal councils and farmers, and for planting in parks, town reserves, hospital grounds, and cemeteries. Large sums have been distributed by the State in improvement fellings and the thinning out of young timber, principally in the Bogan, Narrandera, and Murray River districts. Over a quarter of a million acres of pine forest and red gum have been so treated.

(ii.) *Victoria.* In Victoria there are four forest nurseries, the largest being situated at Macedon, the smaller at Creswick, Havelock, and Tintarra. At Macedon the arboretum contains many fine specimens of the conifers and deciduous trees of Europe, America, and Asia. While the bulk of the yields are retained for the State plantations, there are considerable distributions for public parks and recreation reserves, "Arbor-day" planting of streets and roads, municipal councils and water trusts, mechanics' institutes and libraries, cemeteries, State schools, and other institutions, and farmers and private persons, the applications of those in dry districts receiving first consideration.

Among the principal native hardwoods raised and distributed are blue gum, sugar gum, and tallowwood, with some jarrah for the plantations; among conifers, the Monterey, Corsican, Black Austrian, Canary Island, Maritime, and Aleppo pines, the blue pine of India, the American white and yellow pines, with several spruces; and among other exotics, peppers, Indian cedars, oaks, elms, planes, silver poplars, sycamores, and chestnuts. Great success has attended the establishment of a new nursery for conifers at Creswick.

The principal forest plantation is along the lower slopes of the You Yangs, near Geelong, where about 1000 acres have been enclosed and planted with eucalypts and conifers. Good results have attended the cultivation of the broad leaf and feather leaf wattles.

At another plantation, viz., at Sawpit Gully, among the foothills of the Dividing Range, near Creswick, conifers are chiefly grown. Minor plantations of blue gum and sugar gum are established at Havelock and Majorca, near Maryborough; and at Mount Macedon, the principal species of oak, elm, ash, plane, sycamore, pine, spruce, eucalypts, and willows are planted. During 1909 additional planting of conifers was carried out at Creswick, Frankston, and Warrnambool, and a large area was sown with tan-yielding wattles at You Yangs.

The principal work of the year in forest reserves and plantations has been improvement thinning and felling, planting, fencing, and construction of dams. The planted area of some of the older plantations has been enlarged.

Officers of the Lands and Forests Departments have made joint inspections of portions of reserved forests, to discover what areas, suitable for settlement, can be excised from the forest and made available. As a result, the forests will suffer a further loss of 20,000 acres. The officers have also recommended the addition of large areas to the State reserves.

Recent legislation makes provision for the stricter control of grazing in forests, and for more efficient protection from fire.

(iii.) *Queensland.* In Queensland there is a forest plantation of 310 acres. The questions of replanting and further reservation have lately been attracting attention, and the prominence given to them will probably greatly influence forest policy.

(iv.) *South Australia.* In this State there are several plantations, the most important being at Bundaleer (7377 acres) and Wirrabarra (3633 acres), situated some 150 and 190 miles respectively to the north of Adelaide in the direction of Spencer Gulf. The total area of the enclosures for planting and natural regeneration of the indigenous

timber was on 30th June, 1910, 14,898 acres. Of the reserved area, about one-fifth only, it is said, ever bore timber of commercial value, the remainder having been covered for the most part with stunted vegetation. Owing to the absence of high mountain ranges and the dryness of the climate, the forests are not dense. Special attention has been given in South Australia to sylviculture, and great success has been achieved in clothing areas of treeless plain and hillslope with belts of young trees, such as blue, sugar and red gum, and white ironbark. In some parts the Tasmanian blue gum (*E. globulus*) flourishes, but great success has also been attained with the sugar gum (*E. corynocalyx*), a tree indigenous to the State itself. It is found chiefly in the Flinders Range, and used for railway sleepers, telegraph poles, coachbuilding, and in wharf and jetty construction. Two other eucalypts found in South Australia, the white ironbark (*E. leucoxylon*), known locally as "blue gum," and the grey box (*E. hemiphloia*) furnish strong, tough, and durable timber, inlocked in grain and suitable for the same purposes as sugar gum. The common flooded variety of red gum, which has a fairly wide distribution, being found on clay flats and along streams and water-courses, has also been grown in the plantations, but not with the same success as sugar gum. Among conifers which have been grown with fair success are the Monterey, the Maritime, Aleppo, and Stone pines. The Monterey pine (*P. insignis*) outstrips all other trees in growth, and its timber, though softer than other first-class pines, has been utilised for deal tables, packing cases, picket fencing, shelving, and generally for purposes where common deal is useful. The Maritime, Aleppo, and Stone pines are naturally of slower growth. In Europe they furnish useful timber, but in these plantations have not yet reached an age suitable for utilisation. The upright poplar (*P. fastigiata*) growing well over a large area, serves for packing cases, flooring boards, etc. The locally-grown American ash (*Fraxinus americana*) has been used in coachbuilding work, and compares well in quality with the imported American ash. The area suitable for its cultivation in South Australia is, however, very limited, as it requires favourable conditions of soil and climate.

During the last twenty-seven years the Forest Department has issued very large numbers of young plants to the public free of charge, for wind breaks, avenues, and for the shelter of homesteads and buildings generally, over seven million trees having been so distributed. Formerly, bounties were paid under the Forest Act for the encouragement of private persons in planting timber trees.

A substantial increase in the amount voted for 1909-10 has enabled great progress to be made in planting in forest reserves, and a much larger area is now planted than has been the case for many years past. It is anticipated that on completion of the planting season nearly a thousand acres will have been planted. Plans have been prepared for re-afforestation by natural regeneration of a large area in the Penola State forest, under a thorough system of fire protection.

(v.) *Western Australia.* A State sylvicultural nursery is established at Drake's Brook, on the south-western railway, the site chosen being a ti-tree swamp, exotic trees of temperate climates being raised. The planting of the Monterey, Maritime, Aleppo, and Canary Island pines, the blue pine of the Himalayas (*P. excelsa*), the Indian cedar, Lawson's cypress, several kinds of poplar, the Virginian catalpa, white cedar, and American ash has been successful. A large number of pepper trees and sugar gums were raised, chiefly for shade purposes. The trees are sold or given away to settlers, being distributed chiefly in the goldfields region and other districts with little natural forest.

There are also forest plantations—for conifers at Bunbury, for Australian wattles at Spencer's Brook, and for the indigenous sandalwood at Meckering. The planted areas are flourishing, the trees making very healthy growth.

(vi.) *Tasmania.* There are at present only two small experimental plantations. In the State nursery a considerable area is being planted with softwoods.

Particulars regarding nurseries and plantations in 1909 are given hereunder:—

SYLVICULTURAL NURSERIES AND PLANTATIONS, 1909.

Particulars.	New South Wales.	Victoria.	Q'land.	South Australia.	Western Australia.	Tasmania.
Expenditure on plantations and upkeep of sylvicultural nurseries	£808	£4279*	nil	£14,748	£1039	nil
No. of persons engaged in nurseries	8	22	nil	16	5	nil
No. of sylvicultural nurseries ...	1	3	nil	7	1	1
Area of sylvicultural nurseries ...	85 ac.	54 ac.	nil	7 ac.	17 ac.	3 ac.
No. of forest plantations ...	2	10	1	107	3	2
Area of forest plantations ...	100 ac.	10620 ac.	310 ac.	9684 ac.	300 ac.	2 ac.
Extent of public distribution of trees or number of trees issued ...	84,000	29,284	†	317,000	49,000	nil

* Including improvement work in State forest. † There are no forest nurseries issuing trees in Queensland, but a small number of economic and ornamental trees are issued by the Department of Agriculture.

4. **A Forestry School.**—A suitable building, with adequate grounds, has been purchased at Creswick for the establishment of a School of Forestry. The site is near the State plantation and nursery. It is intended to give class-teaching at the school, but the principal aim of the Forest Department will be to keep practical work in the foreground. The principal class subjects, in addition to theoretical forestry, are botany, geology, physics, and land surveying, while in outside work trainees will have regular teaching and experience in the preparation of seed-beds, seed-sowing, propagation, planting out, pruning, the general care and improvement of plantations and natural forests, and the conversion of timber to the best advantage. The desire is to catch the prospective forester young and give him a thorough training in all branches of the work. Facilities will also be afforded to members of the present forests staff to qualify in special subjects by attending winter classes. The school will probably be opened early in 1911.

In September, 1910, an Instructor of Forestry was appointed by the South Australian Government, to assist the Conservator in forest inspection, and particularly to conduct a course in forestry at the Adelaide School of Mines.

§ 3. Commercial Uses of Principal Australian Timbers.

The uses of the more important of Australian timbers are many and various. Four varieties of ironbark, viz., white or grey (*E. paniculata*), narrow-leaved (*E. crebra*), broad-leaved (*E. siderophloia*), and red (*E. sideroxylon*) are largely used for public works, preference being given to the white and narrow-leaved varieties. These timbers are used extensively in the building of bridges and culverts, for railway sleepers and fencing posts, and for framing, naves, spokes, poles and shafts in carriage and waggon building. Ironbark beams are of great strength, hence it is largely employed for girders and joists of upper floors, especially in stores for heavy goods.[1] Another red ironbark (*E. leucoxylon*), heavy, dense, and strong, is greatly valued for bridge beams and piles. Tallowwood (*E. microcorys*) is strong, heavy, very durable, not easily split, and turns and planes well. It is used for bridge-decking, house-flooring (being peculiarly suitable for ballrooms), girders, piles, and fencing posts, and especially for paving blocks, giving even and regular wear under heavy traffic. Even better in this latter regard is blackbutt (*E. pilularis*), a fine hardwood for house and ship building, as well as street paving. Grey gum (*E.*

1. Ironbark girders do not burn rapidly and often stand a fire when iron girders yield through the effect of the heat.

propinqua), makes excellent railway sleepers, and is used for felloes and spokes in coach building. It makes very durable fencing posts, and is also sometimes split for shingles. Murray red gum (*E. rostrata*), the common river gum of all the eastern States, is one of the best hardwoods in contact with the ground, being largely used for poles, house foundations, wood paving, and railway sleepers. It is also extensively cut for mining shafts and public and municipal works. The forest variety of red gum (*E. tereticornis*) serves the same purposes as the river red gum. White mahogany (*E. acmenoides*) is used for posts, poles, girders, and similar classes of work, being an exceedingly durable timber. Red mahogany (*E. resinifera*) is largely employed for general building work, street paving, fencing, and weatherboards. It is very durable and hardens greatly with age. Grey box (*E. hemiphloia*) is very durable in contact with the ground, and is hence used for railway sleepers (lasting from thirty to thirty-five years in the track), telegraph poles, mine props, fence posts, piles, girders, and for heavy framing and naves, wheel cogs, shafts, dray poles, spokes, etc. Bairnsdale grey box (*E. bosistoana*) serves similar purposes. Brush box (*Tristania conferta*), another hard and durable wood, is used for tram-rails, bullock yokes, tool handles, planes, etc. Sydney blue gum (*E. saligna*) is greatly valued by shipwrights and wheelwrights, and furnishes ships' planks, felloes of wheels, etc. It is also used for buildings, and makes very durable paving blocks. Woollybutt (*E. longifolia*) is used for house building, fencing, felloes, spokes, and wheelwrights' work generally. Being durable in contact with the ground, and resistant to heavy traffic, it is also used for street paving. Spotted gum (*E. maculata*) is one of the best hardwoods for bending, even when cold, and is therefore specially valuable in wheelwrights' and coachbuilders' work for poles, shafts, crosspieces, naves, and spokes; also for framing and house building, tram rails, ship planking, decking of bridges, and wood paving. Turpentine (*Syncarpia laurifolia*) is of great durability in the ground or under water, being used for piles or jetties, wharves, bridges, pillars and girders of buildings, wood paving, and hewn posts and rails. Yellow stringy-bark (*E. muelleriana*) is chiefly used for jetty and pier work, and for fencing posts. Blue gum (*E. globulus*) is a valuable timber with straight, symmetrical bole, used for upper timbers and decking in jetty and bridge work, bridge piles, shafts, felloes, spokes and frame work of vehicles, and in general building and construction. Spotted gum (*E. goniocalyx*) furnishes a hard, heavy, and durable timber, similar in appearance to blue gum, and serving the same purposes. Yellow box (*E. melliodora*) bears a large quantity of blossom, and hence is a favourite tree with beekeepers. Its timber is used for piles and posts, squared beams, and stringers for bridges. Messmate (*E. obliqua*) is largely sawn by mills for weatherboards, studs, rafters, joists, etc., and is also used for railway sleepers and fencing posts. Stringy-barks (*E. macrorrhyncha*, *E. capitellata*, *E. piperita*) are sawn by mills into ordinary building timber, and split by settlers into posts and rails and rough building material. Mountain ash (*E. amygdalina regnans*) is sawn into building material, and is also split into palings, shingles, rails, and mining laths. Silvertop (*E. sieberiana seu virgata*) called also Gippsland mountain ash, green top, and white ironbark—is used for ordinary building purposes, and for fencing rails and rough construction. Sugar gum (*E. corynocalyx*) is held in high repute on account of its toughness and durability, and is chiefly used for railway sleepers, telegraph poles, coach building, and in wharf and jetty construction. White or manna gum (*E. viminalis*) is not a good weather timber, but is suitable for interior construction, such as house frames and floors.

The pre-eminent timber trees of the West are jarrah (*E. marginata*) and karri (*E. diversicolor*). Jarrah is in great request for piles in jetty and bridge construction, and for railway sleepers and street paving. It also furnishes a favourite material for boat-building, fencing, and rough furniture, and makes excellent charcoal. Karri is heavy, dense, elastic, and tough, not so easily wrought as jarrah, and used for bridge-decking, flooring, planking, spokes, felloes, shafts, and street-paving. Tuart (*E. gomphocephala*) is exceedingly strong and tough, suitable for the framework of railway waggons, bridge supports, buffers, keelsons, shafts, wheelwrights' work, and generally for all purposes where great strength and hardness are necessary. The red gum (*E. calophylla*) is a fine shade tree, and is valued for the shelter it affords to cattle and sheep.

Its timber, however, is not held in much esteem; but in short lengths it is employed for wheelwrights' work and agricultural implements. Its gum or kino has medicinal properties, and is used locally for tanning hides. Wandoo (*E. redunca*) is used for fencing, wheelwrights' work, and railway buffers and sleepers. The blackbutt (*E. patens*) York gum (*E. loxophleba*), and yate (*E. cornuta*) of the West are largely used for fencing, building, and rough construction.

The Moreton Bay or hoop pine (*Araucaria cunninghami*) is used for interior work (flooring, ceiling, and lining boards) and for packing cases and butter boxes. Brown pine (*Podocarpus elata*) is also used for interior work, and for bridge, jetty, and pier piles. Cypress pine (*Callitris*), including red or black pine (*C. calcarata*); Murray pine (*C. verrucosa*), Port Macquarie pine (*C. macleayana*), and the Richmond River cypress pine (*C. columellaris*) are used for buildings liable to attacks of white ants, being strongly resistant to these pests. Cypress pine is also suitable for bridge decking and makes fine fuel. Red cedar (*Cedrela australis*) furnishes timber of great beauty; it is easily worked and very durable, and is used for furniture and cabinet-making, doors, panelling, and interior fittings generally. Rosewood (*Dysoxylon fraserianum*) is easily wrought, and is used for furniture, turnery, carving, cabinet work, mouldings, planes, window joints, house fittings, and wine casks. Red bean (*Dysoxylon muelleri*) has a finely-figured grain and is an excellent furniture wood. White beech (*Glemina leichhardtii*) is durable and easily worked, and is in great request for decks of vessels, furniture, picture frames, carving, flooring, house-fittings, vats, casks, and general coopers' work. Silky oak (*Grevillea robusta* and *Orites excelsa*) is also in request for coopers' work, and makes handsome furniture and wainscoting. The silky oak has also been used for butter kegs, buckets, churns, etc., and makes good butter boxes for the local markets. Black bean (*Castanospermum australe*), or Moreton Bay chestnut, is used for furniture, cabinet-making, and gun stocks. Tulip-wood (*Harpullia pendula*) is highly esteemed for cabinet-work, being used for door panels, dadoes, and billiard tables. Coachwood (*Ceratopetalum apetalum*) is suitable for boat-building, cabinet work, and coach-building. Kauri pine (*Agathis palmerstoni*) gives a light, strong, and durable timber, and is used for general building and construction, wainscoting, furniture and joinery, railway carriages, and ship-decking. Blackwood (*Acacia melanoxylon*) is very strong and durable, diminishing, however, greatly in weight in seasoning, though shrinking very little in volume. Figured blackwood is a beautiful timber: it is used for furniture, such as billiard tables, chairs, secretaires, casings of pianofortes and organs, and general cabinet work; dadoes, panelling of railway carriages, boat-building, picture frames, wheel naves, gun stocks, walking sticks, and a great variety of useful and ornamental purposes; it is also split into staves for wine and tallow casks. Evergreen beech (*Fagus cunninghami*) yields also a handsome timber, used for furniture, sashes and doors, light joinery, wood-carving, picture frames, and cog-wheels. Huon pine furnishes a fine, strong, and light timber; it is almost indestructible in water, and hence is largely used for boat planking; its beautiful grain brings it into request for furniture, panelling, and wainscoting. The King William variety is very tough, being used for racing sculls; it is also a favourite timber in joiners' work. Celery-top pine is strong and heavy, suitable for furniture, flooring, house frames, coopers' work, and masts. Other Australian brush timbers of minor importance are sassafras (*Atherosperma moschata*), used for saddle-trees and boot lasts; and satin box, sycamore, olive, and pencil-wood, giving woods of beautiful grain for parquetry, veneers, carving, and picture frames. The sandalwood of Western Australia (*Santalum cygnorum*) is a very valuable forest product, and has been exported in varying amounts during the last fifty years.

As aids in the development of Commonwealth industries, the Government is experimenting with Australian woods for rifle stocks, telephone switch boards, etc. It has also made available a sum of money for the seasoning and storing of Australian timber. It is intended to establish seasoning depôts at the Federal Capital, and also at the principal centres in the various States, whence contractors will be able to obtain timber at scheduled rates. Other timber seasoning works have been established by private enterprise.

§ 4. Forestal Industries and Production.

1. **Timber.**—The returns for quantity and value of timber cut and sawn, as given by the States Forestry Departments, are at present very incomplete. Owing to this fact the figures given hereunder are, in some cases, necessarily merely estimates.

QUANTITY OF LOCAL TIMBER SAWN OR HEWN IN EACH STATE OF THE COMMONWEALTH DURING THE YEARS 1905 to 1909.

State.	1905.	1906.	1907.	1908.	1909.
	Sup. feet.	Sup. feet.	Sup. feet.	Sup. feet.	Sup. feet.
New South Wales	112,580,000	119,337,000	122,998,000	123,152,000	134,070,000
Victoria	47,635,358	51,103,000	55,873,000	54,602,000	50,000,000
Queensland	73,930,279	82,901,846	91,752,000	100,760,000	108,391,000
South Australia	155,662	130,763	143,000	436,000	240,500
Western Australia	137,250,340	136,294,697	110,395,000	165,766,000	171,825,000
Tasmania...	40,273,429	39,498,697	35,228,000	44,335,000	45,035,000
Commonwealth	411,825,068	429,166,003	416,389,000	489,051,000	509,561,500

The only States for which an annual return is furnished for the value of locally sawn or hewn timber are South Australia and Tasmania. The values for South Australia for the years 1901 to 1909 are respectively, £23; £154; £413; £400; £340; £230; £815; £1084; and £411. For Tasmania the values for the years 1901 to 1908 are respectively, £117,734; £62,573; £89,227; £92,102; £75,817; £110,689; £93,762; £138,492. The estimate for New South Wales, 1901 to 1906, is £4,050,000; for 1907, £1,440,000, for 1908, £763,241; and for 1909, £801,456. For Victoria, the output of timber, from forest sawmills only, was £153,309 in 1906; £181,590 in 1907; £177,460 in 1908; £189,130 in 1909. The output of Western Australian sawmills was valued at £5,268,235 for the years 1901 to 1907; £763,241 in 1908; £1,105,108 in 1909. For Queensland, for 1908, £665,350; for 1909, £736,578.

2. **Forest Produce.**—Estimates have been made of the total value of forest production, but these must be regarded as mere approximations. Many of the items are very difficult, and some impossible, to obtain. Large returns are credited to firewood, but these have been omitted altogether, since estimates are subject to a wide range of uncertainty.

The Forestry Department of New South Wales estimates that the production in the seven years 1901-7 averaged at least £685,000 per annum. For Victoria the Government Statist gives the following figures:—1904, £230,567; 1905, £206,725; 1906, £217,569; 1907, £244,170; 1908, £234,154; 1909, £255,650. This is exclusive of hewn timber. No figures on a similar basis are available for Queensland. The estimates for South Australia for 1901 to 1908 are £187; £354; £590; £665; £610; £440; £1086 and £1628. Western Australia averages for the seven years 1901-7, £984,264. Tasmania supplies the following estimates for the years 1901 to 1906, viz., £152,102, £83,943, £114,227, £119,477, £94,987, £126,514.

§ 5. Oversea Trade.

1. **Imports.**—The timber imports are shewn according to countries of origin in the table below. Prior to 1908 these figures had been tabulated according to countries whence imported, and were so published in the previous issues of the Year Book. They are now presented in the improved form.

IMPORTS OF DRESSED TIMBER, COMMONWEALTH, 1906 to 1909.

Country of Origin.	Quantity.*				Value.			
	1906.	1907.	1908.	1909.	1906.	1907.	1908.	1909.
	sup. ft.	sup. ft.	sup. ft.	sup. ft.	£	£	£	£
United Kingdom ...	31,006	45,554	160,315	182,062	512	553	3,484	3,562
New Zealand... ...	5,125	17,810	32,704	251	65	111	553	1
Other British Poss. ...	5,970	5,333	201,692	129,208	50	32	1,083	1,016
Norway	44,016,345	52,377,370	36,152,540	42,617,161	275,286	303,173	231,288	263,456
Sweden	2,412,087	7,122,102	7,959,297	12,821,586	15,054	48,056	52,890	89,209
United States ...	1,737,261	1,710,306	3,283,883	1,398,743	20,356	19,950	63,024	23,180
Other For. Countries	1,428	1,153,309	549,554	1,072,713	35	4,730	5,176	9,249
Total	48,209,222	62,431,784	48,339,985	58,221,724	311,358	376,605	357,498	389,673

* Quantities are not included in classes not measured in super. feet.

IMPORTS OF UNDRESSED TIMBER, INCLUDING LOGS, COMMONWEALTH, 1906 TO 1909.

Country of Origin.	Quantity.*				Value.			
	1906.	1907.	1908.	1909.	1906.	1907.	1908.	1909.
	sup. ft.	sup. ft.	sup. ft.	sup. ft.	£	£	£	£
United Kingdom ...	162,204	102,245	40,848	54,075	1,630	1,424	1,020	912
Canada ...	7,320,589	7,933,877	8,612,606	16,999,515	31,540	32,004	36,527	83,938
India	229,350	825,425	343,674	77,674	3,579	16,900	11,085	2,613
New Zealand... ...	65,164,718	69,112,328	82,034,209	69,959,470	314,522	395,043	499,234	460,758
Straits Settlements ...	128,687	147,757	135,871	231,025	925	736	745	1,254
Other British Poss. ...	314,987	2,816	62,860	111,442	7,699	44	1,547	1,084
Japan	1,017,426	12,290,109	9,199,839	6,990,717	4,674	33,966	34,429	28,723
Java	...	537	805,284	479,055	...	11	12,999	1,959
Norway	1,299,269	2,298,711	5,007,451	3,894,852	7,021	13,957	31,997	26,228
Russia	327,550	1,346,590	8,851,925	6,597,627	2,157	10,364	51,051	37,147
Sweden	2,756,200	6,268,170	4,229,960	4,741 846	17,764	39,269	29,693	44,187
United States ...	122,753,533	119,498,896	147,463,309	101,434,431	561,126	631,293	823,786	570,960
Other For. Countries	92,891	203,767	107,791	233,354	735	1,154	2,780	2,205
Total	201,568,404	220,031,028	266,895,627	211,805,083	953,372	1,176,165	1,536,893	1261968

* Quantities are not included in classes not measured in super. feet.

2. **Exports.**—The quantity and value of undressed (sawn) timber exported from 1905 to 1909 is given below, the countries of destination being also shewn.

In the year 1905 the largest quantity of undressed timber was exported. The year 1907 shewed considerable decrease from previous years, both in quantity and value, but the export was again heavy in 1908 and 1909.

EXPORTS OF UNDRESSED TIMBER (SAWN) COMMONWEALTH, 1905 to 1909.

Country to which Exported.	Quantity.*					Value.				
	1905.	1906.	1907.	1908.	1909.	1905.	1906.	1907.	1908.	1909.*
	1000 Sup. ft.	1000 Sup. ft.	1000 Sup. ft.	1000 Sup. ft.	1000 Sup. ft.	£	£	£	£	£
United Kingdom...	30,076	25,561	14,156	20,760	21,686	192,891	167,081	88,010	139,223	151,707
Canada	420	568	368	1,314	492	4,207	5,566	4,240	13,143	5,267
Cape Colony ...	15,244	4,456	4,960	143	261	102,886	23,855	25,629	1,353	2,385
Ceylon	1,765	25	21	3	2,235	6,179	213	211	23	14,864
Fiji	1,255	1,713	1,899	1,523	1,304	8,715	11,159	12,144	10,783	7,935
India	47,441	63,249	40,304	39,995	55,353	293,287	384,463	266,801	276,821	364,350
Mauritius ...	1,405	820	6	241	...	9,328	5,128	66	1,606	...
Natal	7,433	1,826	1,543	961	3,472	51,426	11,356	11,064	5,881	22,010
New Guinea ...	96	142	94	...	152	748	1,260	899	...	1,281
New Zealand ...	17,671	17,705	22,212	36,664	25,423	100,438	120,480	151,985	248,636	172,694
Ocean Island ...	224	574	705	974	407	1,502	3,935	5,579	7,914	3,200
Straits Settlem'nts	290	1,047	254	1,838	601	1,952	5,849	1,909	9,943	3,877
Other British Pos.	769	5	506	4,743	4,021	5,495	38	2,777	31,428	29,694
Argentine Repub.	835	2,948	1,142	1,590	1,134	5,565	19,652	7,618	10,594	7,499
Belgium	90	509	1,286	2,515	1,820	537	3,913	7,659	19,618	12,154
China	8,221	12,335	2,845	2,373	7,263	54,816	81,673	19,397	12,370	26,595
Egypt	2,073	20	91	7,831	10,176	13,819	136	635	52,207	62,096
Germany ...	4,410	3,985	2,199	4,616	2,027	27,394	32,716	19,824	37,354	17,987
Japan	13	403	527	333	73	117	2,695	5,329	2,889	484
Kais'r Wilhelm'sL.	77	30	65	26	70	535	195	475	199	504
Marshall Island ...	101	508	562	460	154	683	3,418	4,177	3,770	1,208
Netherlands ...	...	1,175	869	245	35	...	5,745	2,854	1,660	256
New Pommern ...	32	121	170	204	299	223	841	1,242	1,454	2,390
New Caledonia ...	153	136	147	190	116	883	843	912	1,415	929
Philippine Islands	2,557	2,394	10,589	4,818	306	21,901	12,556	64,426	30,849	3,372
Port'g'ese E. Africa	10,413	3,262	825	1,296	3,435	68,786	18,636	5,039	7,720	23,446
South Sea Islands (so described) ...	251	415	421	248	320	1,710	2,760	3,233	2,069	2,822
U.S. of America ...	452	582	799	416	659	4,683	5,272	7,248	3,633	7,703
Uruguay	1,928	6,137	4,815	9,300	3,894	12,852	40,912	32,073	62,003	25,963
Other For. Count.	142	1,776	967	334	583	961	7,184	6,669	2,642	4,538
Total ...	155,837	154,422	115,347	145,954	147,781	994,519	979,530	760,124	999,200	979,210

* Quantities are not included in classes not measured in super. feet.

QUANTITIES OF TIMBER IMPORTED INTO, AND EXPORTED FROM THE COMMONWEALTH, 1905 to 1909.

Description.	1905.	1906.	1907.	1908.	1909.
IMPORTS.					
Veneers	...	...	...	235,319	296,801
Dressed ... Sup. feet	38,151,816	48,209,222	62,431,784	48,104,666	57,924,923
Undressed ... ,,	163,799,852	200,434,075	207,579,407	250,465,749	200,469,213
Logs ... ,,	176,649	1,134,329	12,451,619	16,581,812	11,335,870
Palings ... No.	...	...	...	...	...
Pickets ... ,,	2,122,685	800,260	1,106,364	1,461,726	1,226,082
Shingles ... ,,	3,913,960	468,980	2,079,041	830,960	1,270,476
Staves—Dressed, etc. No.	1,968,153	2,345,789	1,470,765	62,804	4,600
Undressed ,,				1,610,571	2,390,888
Laths for Blinds ,,	17,279,293	25,367,993	19,966,870	*	
,, Other ,,				21,660,183	25,692,686
Spokes, Rims, Felloes ,,	...	...	...	1,595,127	659,298
Doors ... ,,	8,799	3,343	975	386	4
Architraves, Mouldings, etc. ... Lin. feet	46,622	131,830	65,581	34,175	29,725
Other	*	*	*	*	*

* Quantity not available.

QUANTITIES OF TIMBER IMPORTED AND EXPORTED, ETC.—Continued.

Description.	1905.	1906.	1907.	1908.	1909.
EXPORTS.					
Veneers	...	...	...	...	...
Dressed ... Sup. feet	534,561	745,800	669,647	701,801	1,280,703
Undressed ... „	155,837,454	154,422,490	115,347,179	145,953,614	148,063,541
Logs ... „	1,688,258	1,740,775	4,261,379	3,326,259	4,254,472
Palings ... No.	972,479	656,170	730,825	826,900	718,550
Pickets ... „	15,390	91,594	7,147	6,050	3,000
Shingles ... „	26,796	48,268	38,312	47,100	12,944
Staves—Dressed, etc. No.	...	...	...	*	90
„ Undressed „				911	...
Laths for blinds „	1,516,120	1,533,040	1,571,705	*	
„ other „				1,056,781	14,240
Spokes, Rims, Felloes „	...	...	...	*	*
Doors ... „	747	1,106	1,338	*	*
Architraves, Mouldings, etc. ... Lin. feet	47,064	56,886	50,616	46,848	90,458
Other	*	*	*	*	...
EXCESS OF IMPORTS OVER EXPORTS.					
Veneers	...	...	...	235,319	296,801
Dressed ... Sup. feet	37,617,255	47,463,422	61,762,137	47,402,865	56,644,220
Undressed ... „	7,962,398	46,011,585	92,232,228	104,512,135	52,405,672
Logs ... „	—1,511,609	—606,446	8,190,240	13,255,553	7,081,398
Palings ... No.	—972,479	—656,170	—730,825	—826,900	—718,550
Pickets ... „	2,107,295	708,666	1,099,217	1,455,676	1,223,082
Shingles ... „	3,887,164	420,712	2,040,729	783,860	1,257,532
Staves—Dressed, etc. No.	1,968,153	2,345,789	1,470,765	*	4,510
„ Undressed „				1,609,660	2,390,798
Laths for blinds „	15,763,173	23,834,953	18,395,165	*	
„ other ... „				20,603,402	25,678,446
Spokes, Rims, Felloes „	...	...	...	*	*
Doors ... „	8,052	2,237	—363	*	*
Architraves, Mouldings, etc. ... Lin. feet	—442	74,944	14,965	—12,925	—60,733
Other	*	*	*	*	*

* Quantity not available.
Note. — signifies excess of exports over imports.

VALUE OF TIMBER IMPORTED INTO, AND EXPORTED FROM, THE COMMONWEALTH, 1905 TO 1909.

Description.	1905.	1906.	1907.	1908.	1909.
IMPORTS.					
	£	£	£	£	£
Veneers	...	...	...	8,289	8,778
Dressed	264,843	311,358	376,605	324,997	376,732
Undressed	748,817	948,021	1,141,199	1,388,224	1,158,445
Logs	1,469	5,351	34,966	77,361	51,246
Palings	...	...	...	...	...
Pickets	4,361	2,891	3,748	6,174	4,117
Shingles	2,959	435	2,987	913	1,873
Staves—Dressed, etc.	15,539	20,612	13,326	1,173	342
„ Undressed ...				14,215	18,178
Laths for blinds ...	12,316	18,802	18,118	44	83
„ other ...				16,547	20,970
Spokes, Rims, Felloes ...	...	...	...	35,976	12,408
Doors	3,197	1,373	438	251	1
Architraves, mouldings, etc. ...	509	676	489	156	59
Other	18,235	19,937	40,617	20,271	588
Total value ...	1,072,275	1,329,456	1,632,493	1,894,591	1,653,820

VALUE OF TIMBER IMPORTED AND EXPORTED, ETC.—Continued.

Description.	1905.	1906.	1907.	1908.	1909.
EXPORTS.					
Veneers	...	...	...	...	...
Dressed	5,353	6,886	6,603	7,438	12,104
Undressed	994,519	979,530	760,124	999,200	981,770
Logs	12,988	12,662	22,475	18,611	23,690
Palings	4,952	3,065	3,541	4,227	3,449
Pickets	117	569	66	52	26
Shingles	41	96	108	125	29
Staves—Dressed, etc.	...	...	...	111	1
Undressed				17	...
Laths for blinds	1,899	1,685	1,706	1,073	1,179
,, Other				1,139	20
Spokes, rims, felloes	...	...	...	6,131	5,191
Doors	486	746	1,027	732	991
Architraves, mouldings, etc.	235	467	354	258	511
Other	7,013	6,405	9,129	...	...
Total value	1,027,603	1,012,111	805,133	1,039,114	1,028,961
EXCESS OF IMPORTS OVER EXPORTS.					
Veneers	...	...	...	8,289	8,778
Dressed	259,490	304,472	370,002	317,559	364,628
Undressed	—245,702	—31,509	381,075	389,024	176,675
Logs	—11,519	—7,311	12,491	58,750	27,556
Palings	—4,952	—3,065	—3,541	—4,227	—3,449
Pickets	4,244	2,322	3,682	6,122	4,091
Shingles	2,918	339	2,879	788	1,844
Staves—Dressed, etc.	15,569	20,612	13,326	1,062	341
Undressed				14,198	18,178
Laths for blinds	10,417	17,117	16,412	—1,029	—1,096
,, Other				15,408	20,950
Spokes, rims, felloes	...	...	...	29,845	7,217
Doors	2,711	627	—589	—481	—990
Architraves, mouldings, etc.	274	209	135	—102	—452
Other	11,222	13,532	31,488	20,271	588
Total value	44,672	317,345	827,360	855,477	624,859

Note. — signifies excess of exports over imports.

The exports of sandalwood were :—

EXPORTS OF SANDALWOOD, 1905 to 1909.

Country to which Exported.	Quantity.					Value.				
	1905.	1906.	1907.	1908.	1909.	1905.	1906.	1907.	1908.	1909.
	cwt.	cwt.	cwt.	cwt.	cwt.	£	£	£	£	£
Hong Kong	68,657	134,769	140,586	158,444	54,387	27,306	55,970	50,903	65,037	25,546
Straits Settlements	14,145	9,369	7,284	1,484	12,890	4,479	3,721	2,542	589	5,036
Other British Possessions	...	4,364	4,593	14,680	5,163	...	1,782	1,803	5,604	2,358
China	27,564	28,025	31,637	17,560	31,649	7,008	9,299	10,886	6,238	12,180
Other Foreign Countries	61	478	312	...	...	23	215	103	...	...
Total	110,427	177,005	184,412	192,168	104,089	38,816	70,987	66,237	77,468	45,120

Tanning bark is largely exported from the Commonwealth, as the following table shews:—

EXPORTS OF TANNING BARK, 1905 to 1909.

Country to which Exported.	Quantity.					Value.				
	1905.	1906.	1907.	1908.	1909.	1905.	1906.	1907.	1908.	1909.
	cwt.	cwt.	cwt.	cwt.	cwt.	£	£	£	£	£
United Kingdom ...	48,306	46,825	35,808	5,878	19,424	17,499	16,978	12,976	1,782	8,188
New Zealand ...	69,945	73,831	67,541	72,933	69,137	27,553	30,844	29,160	31,637	31,414
Other British Poss. ...	3,015	519	462	1,655	1,745	1,179	218	214	793	902
Belgium	14,902	6,864	27,011	25,154	15,910	5,667	2,695	10,241	9,432	5,966
France	728	1,879	424	328	206	270	676	192	167	105
Germany	368,200	301,219	223,740	142,382	114,128	135,321	110,754	78,352	53,329	43,063
Other For. Countries ...	5,179	759	3,181	12,034	5,322	2,210	288	1,207	5,270	2,307
Total	510,278	431,896	358,167	260,364	225,872	189,699	162,453	132,342	102,410	91,945

The import of bark was very small, and the net export is little below the gross export.

QUANTITIES AND VALUES OF BARK IMPORTED INTO, AND EXPORTED FROM, THE COMMONWEALTH, 1905 to 1909.

Particulars.	1905.	1906.	1907.	1908.	1909.
QUANTITIES—	cwt.	cwt.	cwt.	cwt.	cwt.
Imports	960	63	344	38,711	28,020
Exports	510,278	431,896	358,167	260,364	225,872
Excess of exports over imports ...	509,318	431,833	357,823	221,653	197,852
VALUES—	£	£	£	£	£
Imports	632	58	156	16,289	12,774
Exports	189,699	162,453	132,342	102,410	91,945
Excess of exports over imports ...	189,067	162,395	132,186	86,121	79,171

SECTION XI.

FISHERIES AND PISCICULTURE.

§ 1. Commercial Fisheries.

1. **Early Fishing Excursions of Malays.**—Economic fisheries in Australia date back to a period long before the exploration of the northern and north-western shores of the continent by Tasman and Dampier. The Malays of Macassar, in their proas, made fishing excursions amongst the reefs and shoals skirting the coast, collecting and curing trepang and bêche-de-mer, a practice continued up to the present time. They arrive ordinarily at the beginning of the north-west monsoon, and return to Macassar after a few weeks, as the south-east monsoon sets in. In addition to collecting trepang and bêche-de-mer, the Malays barter rice, tobacco, bright coloured handkerchiefs, etc., for tortoise-shell, pearlshell, and seed pearls collected by the aborigines.

2. **Fish Stocks.**—Australasia, extending from 10° to 45° south latitude, possesses an abundant and varied fish fauna, which embraces both tropical and temperate varieties and includes destructive, as well as edible species. In rivers and lakes both indigenous and imported varieties thrive. The latter have been introduced and acclimatised for industrial and sporting purposes by Governments and angling societies. Exploitation of the fishing areas—for some classes of fish for the whole year, for others during the breeding season only, or until a certain size is attained—is, where necessary, expressly forbidden; proclaimed localities are closed against net-fishing, and a minimum size of mesh for nets is sometimes fixed. The sea-fishermen in some districts have made regulations in their own interests for the purpose of controlling the market supply, and these they rigorously observe.

3. **Economic Fisheries.**—Australia's food fishes, though abundant, have not led to the development of an industry of national importance, though fresh and salt water fisheries pay handsomely in other countries, and could no doubt do so in Australia. It has been authoritatively asserted that "The collection and distribution of the knowledge of the world's work in fish-culture would make an acre of water more valuable than an acre of land, and the toilers of the sea could reap manifold their present harvest." This would involve also better arrangements for the distribution of fish than exist at present. Official reports state that the possession of scientific knowledge by the fishermen would greatly benefit the industry.

4. **Lake and River Fishing.**—Lake and river fishing take even lower industrial rank than marine fishing, though local catches furnish on the aggregate a not inconsiderable amount of food supply.

5. **Distribution of Supplies.**—The economic arrangements as to distribution impose at present serious difficulties on the development of fishing generally, since there is a wide divergence between the price paid by the consumer and the return received by the

producer. Municipal oversight has been undertaken in Sydney and is proposed in other capitals. It is anticipated that an efficient system of fish supply to private customers will soon be established in the chief centres of population, where good markets are assured for regular deliveries.

6. **Oyster Fisheries.**—Natural oyster beds, whose ample product is of excellent quality, exist in the shallow waters of inlets and estuaries of several parts of the Australian foreshore. By husbanding the natural crop, and by judicious transplanting, the oyster output has been very materially augmented, and it is believed that there is a great future for the industry. The areas are leased by the Government to private persons, lengths of foreshore being taken up and profitably exploited.

7. **Pearl-shelling.**—Pearl-shelling is carried on in the tropical districts of Queensland, South Australia (Northern Territory), and Western Australia. The pearl oyster inhabits the northern and western coasts from Cape York to Shark Bay, a length of shore of over 2000 miles. Along the north coast the pearls taken are small, and their aggregate value inconsiderable; but the shells are marketed in considerable quantities, the industry giving directly and indirectly employment to a large number of people, mostly Japanese, Chinese, and Malays. The Shark Bay pearling industry, however, is carried on for both gems and shells. The fishing is generally conducted with the aid of diving apparatus, in water varying from four to twenty fathoms in depth. The inshore banks and shallower waters have been almost entirely worked out, and the deeper waters, from three to twenty miles off shore, are now being worked.

In tropical Queensland pearlshell diving is actively pursued, and is by far the most important of the fishing industries, Torres Straits being the centre of production. With it the pursuit of bêche-de-mer is carried on, and tortoiseshell is obtained on the coasts. The industry is supervised by the Marine Department, which administers the Fisheries Acts. A statutory limit is fixed for the minimum size of shell that may be gathered. Experiments have been made in cultivating the pearl oyster on suitable banks. A small variety has been discovered at Stradbroke Island, in Moreton Bay, but the commercial value of the produce is small. In October, 1909, a pearl of great beauty and fine quality from the Thursday Island fisheries, was exhibited in Melbourne. Its weight was 32½ grains, and its value was stated at £1000.

The discovery of mother-of-pearl shell in Port Darwin Harbour in 1884 caused a rush of pearling boats from Torres Straits. But the muddiness of the water, rendered almost opaque by the heavy tides, prevented the divers from satisfactorily working the area and led to an abandonment of the industry within three years from its birth. Prospecting in new patches has since been carried out and the industry has been revived. In addition to pearl and trepang fishing, dry-salted fish is also exported from the Territory.

In Western Australia the centres of the industry are Broome, Cossack, Onslow, and Shark Bay. There are two distinct species of mother-of-pearl shell exported. The principal trade is done in the large shells (*Meleagrina margaritifera*), limited in distribution to tropical waters and extending in habitat from Exmouth Gulf northwards. It is used for the larger manufactured articles, such as dessert and fish knife and fork handles, large buttons, and inlaid work. The largest and finest pearls are obtained from it. The second species is that known commercially as the Shark Bay variety (*Meleagrina imbricata*). It is of smaller size and used chiefly for the manufacture of small buttons. The pearls found are of varying value. The Shark Bay pearlshell is collected by dredging in the deeper waters and gathering by hand from the shallow banks at low tide.

The system of licensing boats and men engaged in the pearling industry restricts, in the States where it is in force, indiscriminate exploiting of the areas, and returns a small revenue.

In accordance with the "White Australia" policy, it has lately been urged that the employment of coloured labour in the pearl-shelling industry should be restricted, and white labour encouraged.

The heavy mortality amongst divers has led to suggestions for their medical inspection, and for the establishment of a school for training divers.

§ 2. Fisheries Statistics.

1. **Estimates for the Commonwealth.**—The returns given below have been furnished by the States departments, and estimates, where they have been made, are official. The data do not generally lend themselves to presentation on a uniform scheme, but the principal facts have been compiled as far as possible for the Commonwealth.

GENERAL FISHERIES (EXCLUDING EDIBLE OYSTERS, PEARLSHELL AND BECHE-DE-MER), COMMONWEALTH, 1909.

State.	No. of Boats Engaged.	Value of Boats and Equipment.	No. of Men Employed.	Total Take of		Value of Take.	
				Fish.	Lobsters.	Fish.	Lobsters.
	No.	£	No.	cwt.	doz.	£	£
New South Wales ...	1,155	*	2,381	95,473	8,497	‡72,000	‡2,100
Victoria	780	38,187	1,125	97,933	29,962	67,698	7,403
Queensland... ...	300	11,233	567	34,050	...	32,987	...
South Australia ...	550	25,000	700	23,095	3,522	40,087	3,299
Western Australia ...	222	17,463	437	30,000	10,920	52,500	3,276
Tasmania§	94	7,520	282	17,800	...	11,400	...
Commonwealth ...	3,101	99,403†	5,492	298,351	52,901	276,672	16,078

* Figures not available. † Exclusive of New South Wales. ‡ Estimated. § 1908 figures; returns for 1909 not available.

EDIBLE OYSTER-FISHERIES, COMMONWEALTH, 1909.

State.	Number of Boats Engaged.	Value of Boats and Equipment.	Number of Men Employed	Number of Leases.	Length of Foreshore in Leases.	Oysters Taken.	
						Quantity.	Value.
	No.	£	No.	No.	Miles.	cwt.	£
New South Wales ...	*	*	*	2,282	376	20,809	27,192
Victoria	...	...	...	...	...	...	...
Queensland... ...	133	7,850	167	807	*	38,300	36,000
South Australia ...	6	*	8	*	*	*	*
Western Australia ...	...	...	...	...	...	...	...
Tasmania	...	...	...	...	...	...	...
Commonwealth ...	*	*	*	*	*	*	*

* Figures not available.

PEARL, PEARLSHELL, AND BECHE-DE-MER FISHERIES, COMMONWEALTH, 1909.

State.	Number of Boats Engaged.	Value of Boats and Equipment.	Number of Men Employed.	Quantity of Pearlshell obtained.	Value of Pearlshell obtained.	Value of Pearls obtained.	Value of Bêche-de-mer obtained.
	No.	£	No.	Tons.	£	£	£
New South Wales ...	...	...	...	...	...	...	...
Victoria	...	...	...	...	...	...	...
Queensland... ...	190	57,000	1,362	516	70,505	25,000	14,504
South Australia ...	46	12,375	254	58	10,085	...	1,906
Western Australia ...	331	151,705	2,267	1,196	189,666	52,788	...
Tasmania	...	...	...	...	...	...	...
Commonwealth ...	567	221,080	3,883	1,770	270,256	77,788	16,410

PUBLIC REVENUE FROM FISHERIES, COMMONWEALTH, 1909.

State.	Licenses.	Leases.	Fines and Forfeitures.	Other Sources.	Total.
	£	£	£	£	£
New South Wales ...	1,126	4,980	74	602	6,782
Victoria	...	...	...	...	...
Queensland... ...	5,960	2,132	16	...	8,108
South Australia ...	356	...	...	...	356
Western Australia ...	832	334	44	24	1,234
Tasmania*	538	...	8	23	569
Commonwealth ...	8,812	7,446	142	649	17,049

* 1908 figures; returns for 1909 not available.

GENERAL AND OYSTER FISHERIES, COMMONWEALTH, 1905 to 1909.

Particulars.	1905.	1906.	1907.	1908.	1909.
General Fisheries*—					
No. of boats engaged ...	2,031	2,510	2,740	3,063	3,101
,, men employed ...	4,186	4,614	4,722	5,107	5,492
Fish obtained—					
Quantity ... cwt.	203,720	213,290	265,650	289,820	298,351
Value... ... £	119,060	132,190	222,000	259,392	276,672
Lobsters obtained—Value, £	9,496	12,398	11,460	16,163	16,078
Edible Oyster Fisheries—					
No. of boats engaged† ...	137	150	153	139	139
,, men employed† ...	208	208	218	196	175
Oysters obtained—					
Quantity ... cwt.	18,572‡	20,100‡	79,832	57,590	59,109§
Value ... £	20,787‡	22,509‡	63,438	61,900	63,192§
Public Revenue from Fisheries					
Licenses ... £	9,221	8,200	8,419	8,891	8,812
Leases ... ... £	6,268	6,939	6,699	7,001	7,446
Fines and forfeitures £	162	388	208	168	142
Other sources ... £	202	334	503	885	649
Total ... £	15,853	15,861	15,829	16,945	17,049

* Exclusive of South Australia for 1905, and of New South Wales for 1905 and 1906. † Queensland and South Australia only. There are practically no oyster fisheries in Victoria, Western Australia, and Tasmania. ‡ New South Wales only. § New South Wales and Queensland only.

PEARL, PEARLSHELL AND BECHE-DE-MER FISHERIES, COMMONWEALTH,*
1905 TO 1909.

Particulars.	1905.	1906.	1907.	1908.	1909.
No. of boats engaged ...	741	603	625	604	567
No. of men employed † ...	3,549	3,767	3,920	3,852	3,883
Pearlshell obtained—					
Quantity ... tons	1,813	1,747	2,034	1,768	1,770
Value ... ... £	196,874	187,323	249,115	219,098	270,256
Pearls obtained ‡—					
Value ... ... £	41,686	59,524	64,890	49,225	77,788
Bêche-de-mer obtained—					
Quantity ... tons	187	235	358	346	352
Value ... ... £	14,598	20,541	30,931	22,903	16,410
Tortoiseshell obtained—					
Quantity ... lbs.	2,543	3,659	3,437	5,056	3,532
Value ... ... £	1,370	2,007	2,042	2,776	1,739

* Queensland, Northern Territory and Western Australia only. There is no production in the other States. † Exclusive of Northern Territory from 1905 to 1907. ‡ As returned.

2. **States Fisheries Statistics.**—(i.) *New South Wales.* Much of the information is approximate. From 1904 to 1906 the average numbers of men and boats employed in general fisheries were respectively 1730 and 849; the average annual quantity of fish marketed was nearly six million pounds. In 1907 the estimated number of men employed was 1935, and of boats, 1025; the take of fish was 124,078 baskets, averaging 75 lbs. each. In 1908 there were 1163 boats, worked by 2093 men, the take being 134,437 baskets of fish, 11,031 dozen lobsters, and 3478 baskets (80 lbs. each) of prawns. In 1909, 1155 boats and 2381 men were licensed; the take was 142,573 baskets of fish, 8497 dozen lobsters, and 6762 baskets of prawns. The approximate value in 1907 was £64,000, in 1908 £72,760, and in 1909 £74,000. The fisheries revenue over a series of years averaged £6000 annually. It was £6626 in 1908, and £6782 in 1909.

Considerable portions of the foreshores and shallow areas of the river estuaries are excellent natural oyster-beds, and with constant attention the annual yield of oysters could no doubt be materially increased. In 1907 the oyster leases covered 65 acres of deep water, and 553,975 yards of foreshore, and the yield was 14,406 bags, valued at £25,210. In 1908 there were leased 72 acres of deep water, and 597,495 yards of foreshore, from which 20,590 bags, value £26,900, were taken. The foreshore leased in 1909 was 662,135 yards, the take being 15,538 bags, valued at £27,192.

(ii.) *Victoria.* In 1908 a Fisheries Inquiries Board investigated the conditions of the fishing industry in Victoria. The scope of the inquiry covered questions as to the permanent and temporary closing of areas against fishing; the length and number of nets to be used by any one party; poaching; the destruction of cormorants; the appointment of local inspectors; adequate punishment for offences against the Fisheries Act; trawling and long line fishing experiments; and the handling, freight, and marketing of fish. Some of the recommendations of the Board were given effect to, others are still under the consideration of the Government. The Fisheries Branch was, in 1909, transferred from the Public Works to the Agricultural Department, with a view to its reorganisation on the lines suggested in the Board's report. Legislation is proposed that is expected to result in the industry being considerably advanced in the near future. The number of boats engaged in the industry averages 700 over a series of years, and of men 1100. In 1907 there were 726 boats engaged, valued, with their equipment, at £38,666, and carrying 1153 men; in 1908, 755 boats, carrying 1158 men, and valued at £38,321. The take in 1907 was 99,707 cwt. of fish, valued at £60,442; and 24,889 dozen lobsters, valued at £6179. In 1908 it was 93,899 cwt. of fish, valued at £65,184; and 27,127 dozen lobsters, valued at £6726. In 1909, 780 boats and 1125 men were

engaged, the value of the former being £38,187. The take was 97,933 cwt. of fish, valued at £67,698; and 29,962 dozen lobsters, valued at £7403. Licenses to net in certain waters are issued without fee. These are not annual, but are supplemented every year by new issues. It is proposed to make the registration annual, and impose a fee. In 1907 legal proceedings, which called attention to the fact that the necessary licenses had not been taken out in many cases, resulted in a large increase in the issue of licenses. In 1906, 39 were issued to men and 38 to boats. In 1907 the numbers were 176 and 80; in 1908, 83 and 45; and in 1909, 85 and 45 respectively. There is no separate revenue credited to fisheries, the small amount derived by way of fines being credited to general revenue.

Annual leases have been granted to oyster fisheries, but the return has been insignificant. In 1909 only three leases were granted (to take effect from 1st January, 1910); none were granted during the preceding three years.

(iii.) *Queensland.* Prior to 1907 no account was kept of the value of boats and equipment, but an approximation believed to be very close was furnished. Over a series of years the number of boats and men engaged in general fisheries averaged 250 and 500. In 1907, 242 boats, valued, with equipment, at £6596, and carrying 497 men, were worked; in 1908, 266 boats, valued at £8924, carrying 497 men; and in 1909, 300 boats, valued at £11,233, and carrying 567 men. The take in 1907 was 32,500 cwt., valued at £24,437; in 1908, 31,000 cwt., valued at £28,519; and in 1909, 34,050 cwt., valued at £32,987. There are no lobster fisheries. The amount put up in the fish-preserving establishments is not great, but the demand for fish locally tinned is growing. The revenue from fisheries in Queensland is considerable, and is chiefly derived from licenses. Since 1904 it has annually exceeded £7000, being in 1907, £7921; in 1908, £8176; and in 1909, £8108.

For oyster fisheries, the deep waters in Moreton Bay and Sandy Strait are leased as dredge sections, which extend across the channels to the islands, and contain from 100 to 1000 acres each. Within these sections the majority of the oyster banks (ground containing up to 30 acres lying within two feet of low-water mark) are situated on the foreshores of the islands, and on the mud and sand flats. In 1907, 149 boats, valued at about £8000, and carrying 212 men; in 1908, 135 boats, valued at £7800, and carrying 190 men; and in 1909, 133 boats, valued at £7850, and carrying 167 men, were engaged. In 1907, 60,000 cwt. of oysters were taken, valued at £37,500; in 1908, 37,000 cwt., valued at £35,000; and in 1909, 38,300 cwt., valued at £36,000. Leases granted numbered 924 in 1907, 885 in 1908, and 807 in 1909.

In the pearlshell industry, the last two years have been satisfactory, notwithstanding the industrial trouble early in 1908. Prices improved considerably, as much as £150 per ton being realised for pearlshell. During the last four years, however, there has been a considerable diminution in production, the number of boats and men engaged having been much fewer than in preceding years. In 1907, 211 boats, valued at £63,300, and carrying 1420 men, were employed. The take was 577 tons of pearlshell, valued at £70,495; 338 tons of bêche-de-mer, valued at £30,033; and 3095 lbs. of tortoiseshell, valued at £1927. In 1908, 204 boats, valued at £61,200, and carrying 1300 men, were engaged. The take was 424 tons of pearlshell, valued at £50,514; 322 tons of bêche-de-mer, valued at £21,631; and 4805 lbs. of tortoiseshell, valued at £2617. In 1909, there were 190 boats, valued at £57,000, and carrying 1362 men. The take was 516½ tons of pearlshell, valued at £70,505; 14 tons of bêche-de-mer, valued at £14,504; and 3156 lbs. of tortoiseshell, valued at £1389. Prior to 1907, no record of the value of pearls obtained was kept, and it is impossible to estimate it. In the year named the value was approximately £30,000; in 1908, £20,000; and in 1909, £25,000.

(iv.) *South Australia and Northern Territory.* In 1907, 633 persons and 512 boats were engaged in general fisheries, the value of boats, equipment, etc., being £21,570. In 1908 the figures were 538 persons, and 487 boats, valued at £19,834; and in 1909, 550 boats, valued at £25,000, carrying 700 men. In 1907 the take was 20,734 cwt. of fish, valued at £25,121, and 1380 dozen lobsters, valued at £369; in 1908, 25,796 cwt. of

fish, valued at £34,756, and 14,000 dozen lobsters, valued at £3677; and in 1909, 23,095 cwt. of fish, valued at £40,087, and 3522 dozen lobsters, valued at £3299. The revenue from general fisheries was £286 in 1907, £368 in 1908, and £356 in 1909, all from licenses. There are two fish-preserving establishments in the Northern Territory. Legislation to increase the powers of inspectors and to enforce compulsory licensing of fishermen and boats in all cases is proposed, the necessary Bill having been introduced into Parliament in August, 1909. Oyster fishing has been introduced, but has not, up to the present, attained any great dimensions. In 1907, 4 boats and 6 men were engaged, and 416 bags were taken, valued at £728. For 1908 no figures are available. In 1909, 6 boats were engaged, employing 8 men.

In pearl-shelling, the limitation of shelling grounds and the scarcity of suitable labour has considerably hampered the industry, not more than half the fleet of boats having been engaged in late years. No pearls have been declared, but it is hardly possible that none were procured. It is believed that a quantity of pearls pass through the post office without the knowledge of the Customs, and that dishonest divers send some away unknown to the boat-owners—in some instances by special messengers. There are indications that trepang fishing will receive more attention than hitherto from Europeans, in whose hands the whole of the industry is now held. The closing of the coast against the Macassar proas must necessarily cause a shrinkage, but it is expected that in the course of a year or two this will prove a great boon to local boats, inasmuch as it will give the fishing grounds time to recoup. Both the pearlshell and the trepang fisheries are capable of expansion. In 1907, 31 boats were engaged; pearlshell taken amounted to 64 tons, valued at £8805. Other products were:—342 lbs. of tortoiseshell, valued at £115; 38,976 lbs. of dried fish, valued at £822; and 20 tons of bêche-de-mer, valued at £898. In 1908, 52 boats were licensed, valued at £16,500, crews numbering 248. During the year, however, many of the boats were taken off for want of men, others to carry on different work. The take was 58 tons of pearlshell, valued at £7578; 24 tons of bêche-de-mer, valued at £1272; 83,900 lbs. of dried fish, valued at £1697; and 251 lbs. of tortoiseshell, valued at £159. Revenue from licenses amounted in 1908 to £59. In 1909, the licensed pearling fleet consisted of 39 luggers, one steamer, and six canoes. Of these boats only 26 were actually engaged. The area worked over was old ground. The pearlshell taken was 58½ tons, valued at £10,085. With a take equal to that of the previous year, the price realised was about 25 per cent. better. No pearls were reported. The export of trepang was 38 tons, valued at £1906. This industry has been steadily increasing since 1905, when the coast was closed to the Macassar fishermen. The production of dried fish in 1909 was 63,504 lbs. valued at £1091; and of tortoiseshell, 376 lbs. valued at £350.

(v.) *Western Australia.* In 1907 there were engaged in general fisheries in Western Australia 235 boats, valued, with their equipment, at £16,500, and carrying 504 men; in 1908, 298 boats, valued at £21,328, and carrying 539 men; in 1909, 222 boats, valued at £17,463, and carrying 437 men. The take in 1908 was 1500 tons of fish, valued at £50,000, and 10,000 doz. lobsters, valued at £3000. In 1909 it was 1500 tons of fish, valued at £52,500, and 10,920 dozen lobsters, valued at £3276. Revenue from fisheries amounted in 1907 to £787, in 1908 to £1174, and in 1909 to £1234.

In the pearl and pearlshell fisheries in 1907, 383 vessels carried crews aggregating 2500, a great number of whom were Asiatics; in 1908, 348 vessels carried 2304 labourers; in 1909, 331 boats carried 2267 men. The value of boats and equipment in 1909 was £151,705. The quantity of pearlshell obtained in 1907 was 1393 tons, and the value £169,815; in 1908 the quantity was 1286 tons, valued at £161,006; and in 1909, 1196 tons, valued at £189,666. Pearls to the value of £64,690, £29,225, and £52,788 were taken in 1907, 1908, and 1909 respectively. The bêche-de-mer fisheries are little developed, and no produce of commercial value was obtained during the last three years, although in previous years small quantities have been marketed.

(vi.) *Tasmania.* The fishing boats and fishermen in Tasmania are not licensed, and no record is kept of them. The fish markets are under the control of the municipalities,

and these do not keep complete records of quantities sold. The number of boats engaged in 1908 was 94, with crews aggregating 282. The estimated total value of boats and equipment was £7500. The estimated take of fish was 17,800 cwt., estimated value £11,400. There are no lobster fisheries. The revenue over a series of years averages about £600, mostly derived from licenses to angle for salmon and trout with rod and line. In 1907 the total receipts were £596; in 1908 £569.

Oyster fisheries are not worked except in a most primitive way.

The work of the Commissioner trends mostly in the way of breeding and distributing young fresh-water fish, especially acclimatised trout.

§ 3. Oversea Trade in Fish.

That the development of the fishing industry in Australia leaves much to be desired is evident from the fact that the import of preserved fish into the Commonwealth is large, the export inconsiderable. The figures for the trade are as follows:—

IMPORTS OF FISH, COMMONWEALTH, 1905 to 1909.

Classification.		1905.	1906.	1907.	1908.	1909.
Fresh (oysters) ...	cwt.	8,195	9,225	12,288	9,702	10,580
	£	3,564	4,075	5,607	4,381	4,989
*Fresh, or preserved by cold process... ...	cwt.	11,386	9,591	12,970	19,311	11,355
	£	16,507	14,632	22,698	48,072	20,785
Potted	cwt.	†	†	†	†	†
	£	8,508	11,934	13,364	20,874	22,082
Preserved in tins ...	cwt.	120,213	135,872	127,555	144,750	137,860
	£	288,371	310,656	316,320	400,981	371,620
*Smoked, dried and n.e.i.	cwt.	16,992	17,336	15,933	19,349	21,667
	£	27,898	29,729	33,078	34,780	47,096
Total ...	cwt.‡	156,786	172,024	168,746	193,112	181,462
	£	344,848	371,026	391,067	509,088	466,572

* In 1905 and 1906, smoked fish are included with "fresh or preserved by cold process."
† Not available. ‡ Exclusive of potted fish.

EXPORTS OF FISH (AUSTRALIAN PRODUCE), 1905 to 1909.

Classification.		1905.	1906.	1907.	1908.	1909.
Fish, smoked, or preserved by cold process	cwt.	179	264	160	394	994
	£	287	468	296	1,230	2,896
Preserved in tins, dried, salted, etc.	cwt.	6,234	6,107	8,651	7,006	6,746
	£	22,499	24,559	38,977	23,299	15,556
Total ...	cwt.	6,413	6,371	8,811	7,400	7,740
	£	22,786	25,027	39,273	24,529	18,452

A considerable development has taken place lately in the fish preserving industry. Two factories were opened in the Northern Territory of South Australia in 1907, and a

large output resulted from the operations of those previously established. There was, however, for the Commonwealth an excess of imports over exports amounting to £350,000 in 1907, £475,000 in 1908, and £450,000 in 1909.

The exports of pearlshell and tortoiseshell are given hereunder for the five years 1905-9 :—

EXPORTS OF PEARLSHELL AND TORTOISESHELL, 1905 to 1909.

COMMONWEALTH.

Article.		1905.	1906.	1907.	1908.	1909.
Pearlshell	cwt.	47,648	35,632	41,244	40,746	34,579
	£	252,895	212,242	252,063	250,901	250,274
Tortoiseshell	lbs.	4,139	4,835	3,566	5,310	3,207
	£	2,812	2,507	2,192	2,783	1,557

§ 4. Development of the Fishing Industry.

1. **Transport and Marketing.**—The large importations of fish into the Commonwealth indicate the scope for the development of the local fishing industry. For many years the question of securing to the consumer a regular supply of a wholesome article at a moderate price has been under consideration. In Sydney, the City Council has undertaken the handling and marketing of the product, but the result of the experiment is as yet indecisive. Where quick transport by rail or steamer is not provided, the catch of fish in tropical or sub-tropical waters can only be locally consumed, since speedy marketing is essential. Adequate refrigerating apparatus on railway waggons and coasting steamers, and quick transport to centres of population might, however, alter the economic condition in a satisfactory direction. At the present time the natural wealth of Australia in fish is exploited only to a very slight extent. The daily supply of fish in Great Britain is 300,000 tons, and the deep sea fisheries cover an enormous area.

2. **Experiment and Culture.**—(i.) *The Existing Fisheries.* In many respects the fishing industry is capable of modification and development. A good deal has been effected by the State Governments in the way of experiment and culture, but much yet remains to be done before the industry is at all commensurate with the industrial progress and consuming capacities of the Commonwealth. A uniform policy of development for Australia is desirable, and recommendations have been made that the Fisheries Departments of the various States should co-operate with the Federal Government in its efforts to increase the productiveness of the Commonwealth waters, and the research work generally undertaken by it; and that uniform fisheries laws should be adopted by adjacent States. The existing fishing is inshore, the supplies being obtained from the vicinity of river estuaries and lakes. Deep-sea fishing, as established and carried on in older countries, is, so far, practically non-existent in Australia. It has been established that the deposits of fish eggs generally float upon the water. The drift of currents or the influence of winds often carry them a considerable distance from the shore, thus affording very little chance of development. The problem that is now engaging experts all over the world is how to artificially control the drift of eggs, so that the fish may be hatched near shore under the most favourable conditions.

To prevent the importation of fish of predaceous habits, or otherwise undesirable, all live fish arriving in Australia are examined on shipboard.

(ii.) *New South Wales.* In New South Wales, trawling experiments have shewn that considerable areas along the coast are suitable fishing grounds, but practical work on commercial lines is yet undeveloped. The stocking of rivers and lakes was begun by private enterprise, but Government aid was granted later, and eminent success has been

attained, among other fish, with the Californian rainbow trout. Young fry are distributed annually from the trout hatchery at Prospect, and the natural reproduction of the fish in the streams that issue from the mountain ranges is regarded as a valuable asset. In 1902 attempts were successfully made to transport European fishes alive to Australia. A marine hatchery and biological station has been completed at Gunnamatta Bay, Port Hacking, by means of which it is proposed to gradually acclimatise suitable fishes. The output of ova and fry last season was in excess of that of previous years. The natural oyster beds are also being extended. In September, 1909, a Fisheries Exhibition was held at Sydney, to shew the resources of the State.

With the object of ascertaining something of the movements of oceanic fishes, as well as of those estuarine fishes which make periodical oceanic migrations, lighthouse-keepers on the coast were requested to report weekly the various kinds of fishes, etc., observed travelling along the coast, as well as the quantity and size of the fish seen. Some very useful information has in this way been obtained.

By arrangement with the Commonwealth Fisheries' Department, members of the staff of the Australian Museum, Sydney, accompany the F.I.S. "Endeavour" on various cruises. Specimens are collected, mounted for scientific purposes, and distributed to other Australian museums, a considerable number being put aside for the Fishery Museum to be established by the Commonwealth Government in connection with the department.

(iii.) *Victoria.* In Victoria, besides the culture that has been mainly the work of private individuals and angling clubs, the Government has incurred the expenditure of a sum of money on hatcheries with good results. Fry and yearlings are distributed, and one consignment of the latter was despatched from the Geelong hatchery and liberated without loss at Mundaring, Western Australia. Young rainbow and Loch Leven trout are also released into the rivers of the State from the hatcheries lately established at the Zoological Gardens. At Studley Park, Melbourne, and at Ballarat, there are also ponds for experimental culture. Trawling experiments were conducted some years ago, but the results were inconclusive.

(iv.) *Queensland.* In Queensland artificial hatching was undertaken by the Acclimatisation Society of Southern Queensland. Here, also, the American rainbow trout has succeeded, fry being distributed from the hatchery at Spring Creek, Killarney. The lung-fish, formerly known only in two streams, has been successfully transplanted to several other streams. Oyster beds are also being developed in several parts, and improved methods of culture have largely increased the output. The trawling experiments of 1901 and 1902 point to the improbability of a great trawling industry being established. The trawling area off Queensland would be a mere strip, because of the presence of the coral region immediately to the north and the fact that the sea deepens very rapidly to the east.

(v.) *South Australia.* In South Australia the indiscriminate exploitation of the Port Lincoln and adjacent oyster beds led to the necessity for their being closed from time to time to prevent the district from being altogether worked out. The future outlook has in this way been improved as regards oyster culture. The South Australian general fishing grounds have been stated to be most desirable areas, only wanting men and boats to ensure a large take. Many new grounds have been opened up on the West Coast. Trawling by private individuals has been undertaken. The question of establishing a floating hatchery is under consideration.

On the 1st April, 1910, the Fisheries Act Amendment Act of 1909 became law. It provides that a fisherman must be a natural born or naturalised British subject, and must be licensed, and have his boat registered and marked. Inspectors are given considerable power to protect the industry and those engaged in it.

The Fisheries Department is taking active steps to increase supplies, and is gathering information respecting natural breeding grounds, with a view to making them sanctuaries for the breeding of young fish.

(vi.) *Western Australia.* In Western Australia the coastal waters have been examined to ascertain whether suitable trawling grounds exist. The Acclimatisation Committee has successfully hatched and liberated trout, the Mundaring Weir being stocked with the Loch Leven variety. Perch were stocked in the lakes near Wanneroo Caves.

(vii.) *Tasmania.* Considerable distributions of ova and fry are annually made from the River Plenty in Tasmania. Besides the supplies to Tasmanian waters, the northern States are also recipients of ova.

§ . The Commonwealth Department of Fisheries.

1. **The Federal Council of Australasia.**—The Federal Council had power to legislate with regard to fisheries in Australasian waters beyond territorial limits. In its second session (opened 16th January, 1888), an Act was passed to regulate pearlshell and bêche-de-mer fisheries in Australasian waters adjacent to Queensland ; and in the third session, opened shortly afterwards, the Act was made applicable to Western Australia. By the passing of the Commonwealth Constitution Act of 1900, however, the Federal Council was abolished.

2. **Commonwealth Investigations.**—In 1907, the Commonwealth Government decided to demonstrate what might be attained commercially by the application of modern methods and experience. A Federal Investigation Ship, the *Endeavour*, was constructed specially for the work, and a Director of Fisheries was appointed. Cruises and experiments were immediately instituted. These shew that the Commonwealth possesses an asset of considerable value in her sea fisheries. The scope and results of the inquiries are set out in the Director's reports, and are summarised below.

3. **Scope of the Inquiry.**—The immediate scope laid down for the investigations was, shortly, as follows :—

(i.) By various means of capture to ascertain what marketable food-fishes may be found in ocean waters adjacent to Australia.
(ii.) In what quantity they may be taken.
(iii.) To what extent they migrate, and where.
(iv.) How they may be conveniently and economically captured.
(v.) By systematic survey to find out and chart suitable fishing grounds.

In addition to the work which is being thus carried on in the various recognised methods of capture (including long-line and drift-net fishing, etc.), survey, hydrographic work, etc., is conducted, for the purpose of ascertaining the nature of the bottom, depth of water, currents, and sea temperature.

4. **The F.I.S. "Endeavour."**—The construction of the investigation vessel was undertaken in the Commonwealth, and was upon the lines shewn by the most recent European experience to be of greatest advantage, with necessary modifications to suit the Australian climate. Australian materials were used. On 1st June, 1908, the keel was laid, and on 27th August, the steel hull was ready for launching. The official trial took place in January, 1909, and on 9th March, the equipment being complete, there was put in commission the first Commonwealth-owned seagoing ship, named *Endeavour*, after Captain Cook's historic vessel. The measurements of the vessel are :—134 ft. 9 in. over all ; beam 23 ft.; moulded depth, 11 ft. 9 in.; greatest draft, 11 ft. 9 in. The engines are of triple expansion type, and develop 440 i.h.p. The speed is nearly 11 knots. The vessel is suitably equipped for her work, all available space being put to use; and has proved to be an excellent and reliable seaboat. She closely resembles a modern trawler, fittings for her special service having been added. The main winch is especially powerful, and carries 2000 fathoms of $2\frac{1}{2}$ in. and $1\frac{1}{2}$ in. wire rope for trawling purposes. An additional reel attached to the fast running axle on the winch carries 1500 fathoms

of ½-in. wire rope for hydrographic observations. The starboard side is generally fitted and equipped for operating the large otter trawl (95 feet head line), while on the port rail a Lucas Sounding Machine (5000 fathoms of piano wire) and davits for various purposes have been fixed. The hold is given up to net stores, and a cool chamber for the keeping of fish, etc. On the deck aft is provided a laboratory, where preliminary investigations are carried out. Here also is stored all the special apparatus, including deep-sea water bottles, thermometers, etc.

5. **The Endeavour's Cruises.**—The first cruise began on 12th March, 1909, and ended six days later. Up to 19th October, 1910, twenty-nine cruises had been undertaken in the waters off the coasts of Queensland (as far north as Bowen, latitude 20° S.), New South Wales, Victoria, South Australia (preliminary surveys), and Tasmania. In many cases, areas have been revisited and tested at different seasons of the year, thus affording a fair indication of their true fisheries value.

6. **Results.**—The object of the investigations is to shew how and where food-fish may be obtained in quantity, rather than to bring large catches into port. Moreover, in untested areas, sounding and survey work generally becomes a main feature. The surveys were extended to cover fields as large as possible, the duration of each haul with the trawl being limited to average about two hours. A commercial vessel, working on well-known grounds, would remain continuously on the richest fields until a freight was secured, and would work longer drags. The "take" of the *Endeavour*, therefore, is considerably below what is to be expected from a vessel working the fields for profit.

Experiments with drift nets and long lines, although up to the present not largely carried out, have given promising results. Trawling has been the principal method tried. By it, the fish are disturbed by a large bag-shaped net drawn along the sea bottom, and they are caught and retained in a trap arrangement at the tail-end of the net. Generally, the inquiries have been limited to waters of not more than 100 fathoms in depth.

The cruises have shewn that both suitable and unsuitable trawling grounds were met with in all parts; and that not all suitable grounds are rich in fish life. Over vast areas the bottom consists of coarse ("hungry") sand, which is almost barren and desert like, while in other instances the sand is covered with quantities of sponges and other growth. In South Australia, in particular, large sections are covered with a fine white sand, and in all these cases fish life is scarce. The richest grounds were found in localities where a reversal of currents or eddies facilitates the accumulation of fish food.

In conjunction with the survey work, investigations were undertaken regarding the deep water currents and their relation to the abundance of fish food and migrations. Bottom samples have been obtained from various depths down to 1200 fathoms, and water samples and temperatures from intermediate depths. Plankton collections from the surface have also been obtained, particularly to ascertain the distribution of pelagic fish eggs.

A varied and scientifically interesting collection of rare fishes, invertebrates, etc., has also been obtained, and arrangements made with naturalists in various parts of the Commonwealth to classify and mount the specimens.

Reports on the hydrographic, survey, and scientific departments of the vessel's activity are being prepared.

7. **Treatment and Disposal of the Catch.**—It was decided that the wisest method of disposing of the fish was to distribute them to recognised charitable institutions. Clashing with the established industry was thus avoided. Upwards of one hundred charities have benefited.

Upon capture, the prompt gutting and washing of the fish is performed. The necessary records are taken regarding their number, size, food, etc. They are then dried, and stowed in the cool chamber.

Unmarketable fish constitute a considerable proportion of the catch. Experience elsewhere has shewn that fish for which there is no sale for consumption, have a considerable value as material for rich fertilisers, and the extraction of oil.

8. **Possibility and Scope for Future Development.**—The records of the *Endeavour's* cruises are preserved in the departmental office, and there all particulars of the progress of the work are available. The Director's report gives two instances of the remarkable return that experience shews is to be expected to accrue from working the areas examined. A vessel working at Flinders Island with Melbourne as a base would yield profits averaging 40 to 45 per cent., while part of the East coast of New South Wales worked with Eden as a base, would in one year earn the cost of the trawl and working expenses.

The inadequacy of the present supply of fish is universally admitted. It is not, as in Great Britain and the northern countries of Europe, a popular article of diet. While the value of consumption of fish was in Norway 12s., and in Holland, Denmark, and the United Kingdom 5s. per head of population, in Australia it was little over 1s. Moreover, in the countries named, a shilling's worth of fish represents a much larger quantity than could be obtained in the Commonwealth, where the wealth of the coastal waters indicates that, with satisfactory handling, the product of the sea would become an article of food for the poorest classes, and a valuable industry would be developed. The uncertainties and limitations of the market, caused by the irregularity of the supply, will be overcome when the fact is recognised that the ocean product, properly exploited, is adequate to supply the demand, however strong. As a result of the *Endeavour's* experiments, definite steps are being taken to carry out well-considered schemes, which it is hoped will revolutionise the now obsolete and cramped condition of the Australian fish trade.

§ 6. Fish Preserving.

Bounties have been provided by the Federal Government for fish preserving. The amounts paid were £27 in 1907-8; £1727 in 1908-9; and £311 in 1909-10. The amount available for 1910-11 is £10,000. It is anticipated that the bounties, together with the increased yield that may be expected as a result from the fisheries investigations now being conducted, will lead to a considerable output and consumption of locally preserved fish. The abundance of fish in Australian waters offers excellent opportunities for the institution of preserving establishments, particularly in those coastal districts which enjoy a temperate climate. Up to the present but little development has taken place. The establishments for fish preserving at the present time are very few.

NUMBER OF FISH-PRESERVING ESTABLISHMENTS, 1905 to 1909.

COMMONWEALTH.

State.	1905.	1906.	1907.	1908.	1909.
New South Wales ...	2	2	1	1	1
Victoria ...	...	...	...	...	...
Queensland ...	4	4	4	5	6
South Australia ...	...	...	2*	2*	2*
Western Australia ...	3	3	3	3	3
Tasmania...	1	...	...	...	...
Commonwealth ...	10	9	10	11	12

* These are in the Northern Territory.

SECTION XII.

MINES AND MINING.

§ 1. The Mineral Wealth of Australia.

1. **Place of Mining in Australian Development.**—Although Australia is pre-eminently a pastoral and agricultural country, the value of the production from its flocks and herds and from its farming industry far exceeding the return from mining, yet its mines and its mining developments are of great and increasing importance. It may also be said that it was the discovery of its immense stores of mineral wealth that first attracted population to Australia, and thus laid the foundation of its nationhood. Though coal was the first discovered mineral of recent times, it was the discovery of gold, overshadowing in popular estimation the former, which brought about a large influx of population and the formation of various settlements.

2. **Extent of Mineral Wealth.**—The large production of gold, silver, copper, and tin, the extent of the coal deposits, the presence of large quantities of iron ore, and the great variety of minerals found in appreciable quantities, suggest that the future history of mining will, in all probability, be more remarkable even than that of the past. For the extent of the total mineral wealth of Australia cannot yet be regarded as well-ascertained since the mineral exploration of the country is, after all, still in its infancy. The presence of considerable deposits of valuable metals has long been known. Thus, silver was discovered by Count Strzelecki as early as 1839, and was worked as early as 1864; copper mining dates back to 1844; lead to about 1848; iron to about 1850; while the discovery of gold in payable quantities dates back to 1851. Cobalt, nickel, manganese, chromium, tungsten, molybdenum, mercury, antimony, bismuth, zinc, etc., have all been found, some in fairly large quantities.

Among the more valuable non-metalliferous substances may be mentioned coke, kerosene shale, graphite, alunite, asbestos, diatomaceous earth, clays, ochres, etc.; in building stones, sandstones, syenites, granites, basalts, augite-andesite, porphyries, serpentines, slates, limestones, and marbles; in precious stones, diamonds, emeralds, rubies, sapphires, amethysts, precious opal, turquoise, topazes, garnets, chrysolites, cairngorm, agates, etc. In general it may be said that the variety of Australian mineral wealth is very great.

3. **Value of Production during 1909.**—The progress of the mineral industry during the year 1909 was seriously interfered with in certain parts of the Commonwealth by labour disputes, which more particularly affected the output of coal and coke, silver-lead, and copper. In coal the decrease in output, as compared with 1908, amounted to £649,445 and was chiefly due to the strike of the New South Wales coal-miners, which commenced on the 8th November, and which practically stopped production for the remainder of the year. The decrease in silver-lead products for 1909, as compared with the preceding

year, amounted to £582,248, and this again is attributable to labour troubles. The Broken Hill strike extended over the first five months of the year, and involved principally two large mines, viz., the Proprietary and Block 10. Nevertheless, the value of the mineral production of the Commonwealth during 1909 exceeded that of previous years with the exception of the years 1903 to 1908, and must therefore be taken as satisfactory when the disabilities under which the industry laboured are taken into consideration. The value of the production in 1909 was £23,074,935, as against £24,580,303 in 1908, and £28,301,346 in 1907, when the value of the mineral production in the Commonwealth reached a maximum. The value of the production from all minerals raised in each State during 1909 is given in the following table :—

COMMONWEALTH MINERAL PRODUCTION IN 1909.

Minerals.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	C'wealth.
	£	£	£	£	£	£	£
Alunite	8,791	...	...	...	...	...	8,791
Antimony	711	5,000	...	...	...	...	5,711
Asbestos	...	...	...	...	154	...	154
Bismuth	1,624	...	†	...	...	980	2,604
Coal	2,618,596	76,945	270,726	...	90,965	26,464	3,083,696
Coke	137,194	...	...	...	...	...	137,194
Copper	424,737	44	853,196	342,329	104,644	608,038	2,332,988
Diamonds	3,959	...	...	...	...	...	3,959
Diatomaceous earth	...	2,400	...	...	...	...	2,400
Gems (unspecified)	...	...	23,116	...	...	...	23,116
Gold	869,546	2,778,956	1,935,178	54,354	6,776,274	190,201	12,604,509
Gypsum	...	1,000	...	190	...	...	1,190
Iron	106,357	...	...	...	...	...	106,357
Iron oxide	4,948	...	...	...	...	...	4,948
Ironstone flux	3,471	...	48,221	8,296	...	...	59,988
Kaolin	...	619	...	...	...	...	619
Lead (pig, etc.)	186,073	...	68,543	90	...	...	254,706
Limestone flux	13,851	...	35,135	2,464	...	...	51,450
Manganese	...	...	2,124	...	...	...	2,124
Molybdenite	3,249	...	9,272	...	...	...	12,521
Opal	61,800	...	2,000	...	...	...	63,800
Platinum	1,720	...	...	...	...	...	1,720
Salt	...	*	...	25,594	...	...	§25,594
Scheelite	14,618	...	...	...	...	...	14,618
Shale	23,617	...	...	...	...	...	23,617
Silver	168,974	2,310	99,093	167	18,778	...	289,322
Silver-lead bullion	1,484,641	...	...	...	...	...	1,785,136
Silver-lead ore		...	...	416	1,199	298,880	
Tin	211,029	7,067	244,927	32,741	65,959	418,165	979,888
Wolfram	11,249	1,432	63,667‡	4,105	100	2,494	83,047
Zinc	1,041,280	...	...	...	244	...	1,041,524
Unenumerated	4,905	24,851	...	7,380	735	...	37,871
Total	7,406,940	2,900,624	3,655,198	478,126	7,059,052	1,545,222	23,045,162

* Not available for publication. † Included in Wolfram. ‡ Including Bismuth. § Exclusive of Victoria.

The figures in the above table do not in all cases coincide with those published by the Mines Departments, as they are exclusive of certain items such as building stones, slates, cement, and lime, which appear in some of the mining returns. The New South Wales Mining Report gives the production of building stone up to the end of 1909 as £18,408 (this figure, however, representing exports alone), while the production in Victoria during the period 1866-1908 is given in the Victorian Mines Report as £3,628,259. For comparative purposes the figures are therefore valueless, the utility of export figures for such a commodity as building stone being more or less dubious.

4. **Total Production to end of 1909.** In the next table will be found the estimated value of the total mineral production in each State up to the end of 1909.

The figures given in this table are also exclusive of the same items referred to in connection with the preceding table.

COMMONWEALTH MINERAL PRODUCTION TO END OF 1909.

Minerals.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	£	£	£	£	£	£	£
Gold	57,189,282	285,100,389	70,224,573	2,840,206	91,780,563	6,956,504	514,091,517
Silver and lead	51,713,516	213,510	1,920,950	411,480	616,518	5,448,713	60,324,687
Copper	10,127,952	213,223	7,166,279	26,969,174	878,482	8,840,916	54,196,026
Tin	8,454,290	769,824	7,195,083	247,884	883,198	10,178,621	27,728,900
Coal	59,250,851	1,712,673	4,392,151	....	708,725	473,572	66,537,972
Other	11,554,914	358,887	1,459,797	1,188,855	73,673	470,261	15,106,387
Total ...	198,290,805	288,368,506	92,358,833	31,657,599	94,941,159	32,368,587	737,985,489

The "other" minerals in New South Wales include antimony, £301,409; bismuth, £123,523; chrome, £101,108; diamonds, £111,462; opal, £1,171,699; oil shale, £2,217,185; and zinc, £3,069,057. In the Victorian returns antimony ore was responsible for £209,529. Included in "other" in the Queensland production were opal, £163,195; gems, other, £140,593; bismuth and wolfram, £633,054; antimony ore, £50,881; manganese, £56,280; limestone, £193,191; and ironstone, £147,155. The chief item in South Australian "other" minerals was salt, £707,594. In the Tasmanian returns limestone flux was responsible for nearly £100,000.

It will be convenient in the succeeding pages to deal first with gold and the various metals, then with non-metallic minerals and precious stones, and finally to furnish some account of the extent of employment in mining generally. With regard to the discovery of the various minerals and to the historical development of their production, it is only proposed to give in this section a brief summary of the more important facts. A more extended account of these matters was given in the Year Books Nos. 1 and 2, to which reference may be made.

(A) METALS.

§ 2. Gold.

1. **Discovery of Gold in Various States.**—The discovery of gold in payable quantities was an epoch-making event in Australian history, for as one writer aptly phrases it, this event "precipitated Australia into nationhood." A reference to the population figures prior and subsequent to the year 1851 amply demonstrates this fact. Thus on 31st December, 1841, the population of the Commonwealth was only 220,968[1]; at the end of 1851 it was still under half a million, viz., 437,665[1], while by the end of 1861 the total had reached 1,168,149[1] persons, that is, the population had quintupled itself in twenty years. A short account of the chief discoveries in each State is appended:—

(i.) *New South Wales.* The first authentic discovery of the precious metal in this State was made by "Assistant-Surveyor" James McBrien, on the 16th February, 1823, in the neighbourhood of the Fish River, and not far from the scene of Hargraves'

1. Figures for these years were given in "A Statistical Account of Australia and New Zealand for 1903-4" as 206,095; 404,889; 1,153,973 respectively, but those refer presumably to the enumerations in the earlier part of the years mentioned.

memorable discovery twenty-eight years later. In 1839 Count Strzelecki reported the existence of gold in the Vale of Clwydd, near Lithgow, while the Rev. W. B. Clarke discovered the precious metal on the Cox River in 1841, and on the Wollondilly in 1842. In 1851, Hargraves found payable deposits of alluvial gold at Lewis Ponds and Summer Hill Creek, and on the Macquarie River. The news of these discoveries, amplified and distorted by all sorts of rumours, soon caused an enormous influx of people into Australia. The dates of other important finds were as follow:—Rich alluvial leads at Forbes, in 1862; Rocky River near Uralla, 1856; in beach sands at northern rivers, 1870; Gulgong, 1871; Mount Drysdale, 1892; Wyalong, 1893.

(ii.) *Victoria.* The first discovery of gold in Victoria was probably that made by the Hon. W. Campbell, at Clunes, in March, 1850. On the 5th July, 1851, notification was made of the discovery of gold in the Yarra Ranges by Mr. L. J. Nichel, and at the Pyrenees Mountains by Mr. James Esmond. Soon after the numerous fields near Mount Alexander were opened up. The chief centres of the gold-mining industry at the present time are in the Bendigo, Ballarat, Beechworth, Castlemaine, Maryborough, Gippsland, Ararat, and Stawell districts. In November, 1906, a remarkable discovery of gold was made near Tarnagulla, where a miner who had prospected the district for years obtained seven ounces of gold from a shaft nineteen feet deep, and some fairly large nuggets being found soon after, the so-called Poseidon rush set in. Several of the nuggets were unearthed within a few inches of the surface. The largest weighed 953 ounces and two others weighed 703 and 675 ounces respectively. The shallow ground was soon worked out, but operations have given satisfactory results in the deeper alluvial.

(iii.) *Queensland.* The first discovery of payable gold in Queensland was that made at Canoona by a party under the leadership of Mr. W. C. Capel. In 1863 gold was found at Canal Creek and Gladstone; Crocodile Creek field was discovered in 1865, Ridgelands in 1867, followed shortly afterwards by Rosewood and Gympie; Townsville was opened up in the following year, and the Gilbert River fields in 1869. Charters Towers dates from 1872; the Palmer goldfield from 1873; the Hodgkinson from 1875; while the celebrated Mount Morgan was first worked in 1882, Croydon in 1886, the Starcke field in 1890, Coen in 1900, and Alice River in 1904.

(iv.) *South Australia.* In South Australia, what is believed to have been the first authentic discovery of gold in the Commonwealth from which actual mining operations resulted was made in January, 1846, at a spot about ten miles east from the City of Adelaide. Although finds were subsequently made in many districts and over large areas, the gold-mining industry has never made very great progress in the State, and South Australia contributes the smallest share of the total gold production of the Commonwealth. There is, however, an immense area of country which has not been systematically prospected. There are numerous deposits of the precious metal at various localities in the Northern Territory, the total yield in 1908 being 8575 ounces, valued at £27,512, of which 1021 ounces were obtained at the Driffield. In June, 1909, a rich find of gold was reported from Tanami, about 200 miles from Hall's Creek and 450 miles to the south-east of Wyndham. Steps are being taken to open up this field by sinking wells to provide permanent water, of which there is a great scarcity in the district. A large number of Chinese are engaged in mining in the Territory. In 1908, out of a total of 824 miners employed, the Chinese numbered 674.

(v.) *Western Australia.* The discovery of gold in Western Australia took place at a much later date than in the eastern States; nevertheless the present production far exceeds in value that of any other portion of the continent. It appears that the precious metal was first detected in 1848, in specimens sent for assay to Adelaide from the Murchison copper and lead deposits. In 1852-53 rich specimens of gold-bearing stone were found by shepherds and others in the eastern districts, but they were unable afterwards to locate the places where the stone was discovered. The late Hon. A. C. Gregory found

traces of gold in quartz in the Bowes River in 1854. In 1861 Mr. Panton found gold near Northam, while shortly afterwards a shepherd brought in rich specimens of auriferous quartz which he had found to the eastward of Northam, but he failed to locate the spot again. Various small finds were made up to 1882, when Mr. A. McRae, riding from Cossack to Roeburne, picked up a nugget weighing fourteen ounces. In 1885 Messrs. Hall, Slattery, and others found gold on the Elvire, Margaret, and Ord Rivers. The Kimberley goldfield was opened in May, 1886. Next year the precious metal was discovered at Yilgarn, and the field was proclaimed in 1888, in which year rich finds were also made at Mallina and Pilbara Creek, the Pilbara field being proclaimed in October. The Ashburton and Yalgoo fields were proclaimed in 1890, and the Murchison in 1891. In 1892 Bayley and Ford discovered the Coolgardie field, obtaining over 500 ozs. of gold in one afternoon by the aid of a tomahawk. Alluvial was discovered by Frost and party at Goongarrie (the Ninety-mile) in May, 1893. Kalgoorlie (Hannan's) was discovered in June of the same year by Messrs. Flannigan and Hannan, Bardoc in August by Messrs. Cashman and Lee, Siberia by Frost and Bonner in October. There were numerous rich discoveries in 1894, such as at "Mount Jackson," "the Pinnacles," "Billy Billy," and at the celebrated Kanowna diggings. Rich finds were also made at Bulong, Londonderry, and the Wealth of Nations, Mr. J. D. Dunn, the discoverer of the latter, obtaining £20,000 of gold in a few days. The "Norseman" was discovered in July by Mr. L. Sinclair, as also the "Lady Shenton" at Menzies. The "Niagara" was discovered in January, 1895, also the rich field known as the "Hands Across the Sea," at Kunanalling. "Blackboy Hill" field was proclaimed in 1897, "Donnybrook" in 1898, while there were further rich finds in 1899.

(vi.) *Tasmania.* The first discovery of the precious metal in the island State is reported to have been made by a Mr. Riva, of Launceston, who is stated to have traced gold in slate rocks in the vicinity of Nine Mile Springs in 1849. A valuable discovery was made in 1852 at the Nook, near Fingal, and further small finds were reported during the same year from Tower Hill Creek and the vicinity of Nine Mile Springs (Lefroy). During 1859 the first quartz mine started operations at Fingal. In the same year James Smith found gold at the River Forth, and Mr. Peter Leete at the Calder, a tributary of the Inglis. Reef gold was discovered in 1869 at Nine Mile Springs (Lefroy) by Mr. S. Richards. The first recorded returns from the Mangana goldfields date from 1870; Waterhouse, 1871; Hellyer, Denison, and Brandy Creek, 1872; Lisle, 1878; Gladstone and Cam, 1881; Minnow and River Forth, 1882; Branxholme and Mount Victoria, 1883; and Mount Lyell, 1886.

2. **Production of Gold at Various Periods.**—In the table hereunder will be found the value of the gold raised each year in the several States and in the Commonwealth from the dates when payable discoveries were first reported. Owing to defective information in the earlier years the figures fall considerably short of the actual totals, for during the first stages of mining development large quantities of gold were taken out of Australia by successful diggers, who preferred to keep the amount of their wealth secret. For South Australia the records in the earlier years are somewhat irregular, and the remark applies to some extent also to the returns for Western Australia and Tasmania.

In New South Wales the production of several important centres, such as Hillgrove and Wyalong, shewed a marked falling-off in 1909. In Victoria the decrease in that year was mainly owing to the closing down of some deep alluvial mines and to the lessened yield from the lode mines at Walhalla, and also from dredging and sluicing. The fall in the gold production in Western Australia is attributable to a decline in one or two mines, the most marked decreases being in the Murchison, North Coolgardie, and Coolgardie Fields. It is stated that generally but little attention was given to prospecting during the year 1909, and that consequently little fresh capital was invested. It is believed, however, that the decline in gold production is only temporary, as past experience has shewn that prosperity in the industry occurs in cycles.

VALUE OF GOLD RAISED IN AUSTRALIA, 1851 to 1909.

Year.	N.S.W.	Victoria.	Q'sland.	S.A.	W.A.	Tas.	C'wealth.
	£	£	£	£		£	£
1851	468,336	851,596	...	...	...	...	1,319,932
1852	2,660,946	9,146,140	...	...	...	...	11,807,086
1853	1,781,172	10,976,392	...	...	...	...	12,757,564
1854	773,209	8,873,932	...	...	...	...	9,647,141
1855	654,594	11,277,152	...	...	...	...	11,931,746
1856	689,174	12,214,976	...	8,800	...	...	12,912,950
1857	674,477	11,320,852	...	876	...	...	11,996,205
1858	1,104,175	10,384,924	...	2,348	...	...	11,491,447
1859	1,259,127	9,394,812	...	730	...	...	10,654,669
1860	1,465,373	8,896,276	11,631	...	...	...	10,373,280
1861	1,806,171	8,140,692	3,137	...	...	...	9,950,000
1862	2,467,780	6,920,804	499	12,442	...	...	9,401,525
1863	1,796,170	6,779,276	11,820	...	...	...	8,587,266
1864	1,304,926	6,489,788	66,513	...	...	...	7,861,227
1865	1,231,243	6,446,216	74,216	...	...	...	7,751,675
1866	1,116,404	6,187,792	68,325	...	...	...	7,372,521
1867	1,053,578	6,005,784	151,125	...	...	4,382	7,214,869
1868	994,665	6,739,672	473,956	2,936	...	2,536	8,213,765
1869	974,149	6,179,024	417,681	15,593	...	514	7,586,961
1870	931,016	5,217,216	390,925	24,217	...	7,475	6,570,849
1871	1,250,485	5,475,768	492,635	6,000	...	14,218	7,239,106
1872	1,644,177	5,325,508	527,365	6,363	...	16,055	7,519,468
1873	1,396,375	4,681,588	572,996	293	...	18,390	6,669,642
1874	1,041,614	4,390,572	1,082,899	4,175	...	18,491	6,537,751
1875	877,694	4,273,668	1,196,583	7,034	...	11,982	6,366,961
1876	613,190	3,855,040	1,140,282	9,888	...	44,923	5,663,323
1877	471,448	3,238,612	1,043,780	...	...	23,289	4,777,129
1878	430,200	3,032,160	1,149,240	1,225	...	100,000	4,712,825
1879	407,219	3,035,788	1,034,216	90	...	230,895	4,708,208
1880	444,253	3,316,484	944,869	...	...	201,297	4,906,903
1881	573,582	3,333,512	957,570	112,825	...	216,901	5,194,390
1882	526,522	3,458,440	785,868	85,354	...	187,337	5,043,521
1883	458,530	3,121,012	736,810	87,729	...	176,442	4,580,523
1884	396,059	3,114,472	1,062,471	93,404	...	160,404	4,826,810
1885	378,665	2,940,872	1,062,514	88,709	...	155,309	4,626,069
1886	366,294	2,660,784	1,187,189	95,674	1,148	117,250	4,428,339
1887	394,579	2,471,004	1,481,990	140,777	18,517	158,533	4,665,400
1888	317,241	2,500,104	1,690,477	69,007	13,273	147,154	4,737,256
1889	434,784	2,459,352	2,695,629	84,956	58,871	119,703	5,853,295
1890	460,285	2,354,240	2,182,563	101,577	86,664	75,888	5,261,217
1891	559,231	2,305,596	2,030,312	126,081	115,182	145,459	5,281,861
1892	575,299	2,617,824	2,164,391	135,755	226,284	158,917	5,878,470
1893	651,286	2,684,504	2,167,794	120,691	421,385	141,326	6,186,986
1894	1,156,717	2,867,816	2,330,282	143,100	787,099	217,024	7,502,038
1895	1,315,929	2,960,344	2,150,561	128,876	879,748	206,115	7,641,573
1896	1,073,360	3,220,348	2,132,979	95,560	1,068,808	237,574	7,828,629
1897	1,104,315	3,251,064	2,552,668	120,230	2,564,977	296,660	9,889,914
1898	1,201,743	3,349,028	2,750,348	95,465	3,990,698	291,496	11,678,778
1899	1,623,320	3,418,000	2,838,446	79,147	6,246,732	327,545	14,533,190
1900	1,070,920	3,229,628	2,871,578	82,482	6,007,610	316,220	13,578,438
1901	737,164	3,102,753	2,541,764	93,222	7,235,653	295,176	14,005,732
1902	684,970	3,062,028	2,720,512	95,203	7,947,661	301,573	14,811,947
1903	1,080,029	3,259,482	2,839,801	90,250	8,770,719	254,403	16,294,684
1904	1,146,109	3,252,045	2,714,934	80,008	8,424,226	280,015	15,897,337
1905	1,165,013	3,173,744	2,517,295	76,824	8,305,654	312,380	15,550,910
1906	1,078,866	3,280,478	2,313,464	81,225	7,622,749	254,963	14,631,745
1907	1,050,730	2,954,617	1,978,938	42,468	7,210,749	277,607	13,515,109
1908	954,854	2,849,838	1,975,554	36,243	6,999,882	242,482	13,058,853
1909	869,546	2,778,956	1,935,178	54,354	6,776,274	190,201	12,604,509
Total £	57,189,282	285,100,389	70,224,573	2,840,206	91,780,563	6,956,504	514,091,517

The amount of gold raised in the Commonwealth in any one year attained its maximum in 1903, in which year Western Australia also reached its highest point. For the other States of the Commonwealth the years in which the greatest yields were obtained, were as follows:—New South Wales, 1852, Victoria, 1856, Queensland, 1900, South Australia, 1894, and Tasmania, 1899.

The following table shews the quantity in fine ounces of gold raised in each State and in the Commonwealth during each of the last nine years, the value of one ounce fine being £4 4s. $11\frac{5}{11}$d.

QUANTITY OF GOLD PRODUCED IN THE COMMONWEALTH, 1901 to 1909.

Year.	N.S.W.	Victoria.	Queensland.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.
1901	173,543	730,450	598,382	21,946	1,703,417	69,490	3,297,228
1902	161,256	720,863	640,463	22,413	1,871,039	70,996	3,487,030
1903	254,260	767,347	668,546	21,247	2,064,803	59,892	3,836,095
1904	269,817	765,596	639,150	18,835	1,983,230	65,921	3,742,549
1905	274,267	747,163	592,622	18,086	1,955,317	73,540	3,660,995
1906	253,987	772,290	544,636	19,122	1,794,548	60,023	3,444,606
1907	247,363	695,576	465,882	9,998	1,697,555	65,354	3,181,728
1908	224,792	670,909	465,085	8,532	1,647,912	57,085	3,074,315
1909	204,708	654,222	455,579	12,796	1,595,270	44,777	2,967,352

3. **Changes in Relative Positions of States as Gold Producers.**—A glance at the figures in the table shewing the value of gold raised will sufficiently explain the enormous increase in the population of Victoria during the period 1851 to 1861, when an average of over 40,000 persons reached the State each year. Victoria maintained its position as the chief gold-producer for a period of forty-seven years, or up to 1898, when its production was first outstripped by that of Western Australia, the latter State from this year onward contributing practically half the entire yield of the Commonwealth. New South Wales occupied the second place on the list until 1876, when Queensland returns exceeded those of the parent State, a condition of things that has been maintained ever since. Up to the year 1884 Tasmania and South Australia in turn occupied the position of lowest contributor to the total gold yield of the Commonwealth, but from 1894 onwards the returns from the former State have been in excess of those of the latter. Taking the average of the last nine years the relative positions of each State in regard to the gold production of the Commonwealth were as follows :—

RELATIVE POSITION OF STATES AS GOLD PRODUCERS, 1901 to 1909.

State.	Annual Average of Gold Production, 1901 to 1909.	Percentage on Common-wealth.	State.	Annual Average of Gold Production, 1901 to 1909.	Percentage on Common-wealth.
	£			£	
Commonwealth ...	**14,485,648**	**100.00**	New South Wales	974,142	6.72
Western Australia	7,699,285	53.15	Tasmania ...	267,645	1.85
Victoria ...	3,079,327	21.26	South Australia	72,200	0.50
Queensland ...	2,393,049	16.52			

4. **Methods of Gold Mining adopted in Each State.**—The circumstances of gold mining in the various States are not quite identical, for which reason reference is made to that of each State.

(i.) *New South Wales.* In New South Wales the earlier "rushes" were to surface alluvial or shallow-sinking grounds. Many of these were apparently soon worked out, but there is reason to believe that in some instances payable results would be obtained by treating the rejected wash-dirt on more scientific principles. With the exhaustion of the surface deposits discoveries were made by sinking to what are called deep alluvial leads, representing the beds of old drainage channels in Pliocene times. The first of these deep alluvial leads was discovered at Forbes, in New South Wales, in 1862. The Tertiary deep leads at Gulgong were discovered in 1871. Cretaceous leads occur at Tibooburra, and detrital gold has been found in Permo-carboniferous conglomerates at Tallawang. The method of dredging is at present being extensively used for winning gold from the beds

of running streams, and also in loose river flats and other wet ground where sinking would be impracticable. The system was introduced from New Zealand, where it was originally applied with great success on the Clutha River, and there are now dredges working on practically all the auriferous rivers of New South Wales. Hydraulic sluicing is also employed in several places, the necessary machinery being fitted to a pontoon for convenience in moving from place to place. The quantity of alluvial gold obtained, other than by dredging, amounted to 11,514 ozs. in 1909, the chief yields being—Tumbarumba, 1379 ozs.; Stuart Town, 1300 ozs.; Gulgong, 563 ozs:, and Major's Creek, 510 ozs. The quantity obtained by dredging was 36,168 ozs.; the largest returns being obtained at Araluen, 10,735 ozs.; Adelong, with 10,321 ozs.; Stuart Town, 4113 ozs.; Wellington, 6346 ozs.; Nundle, 1378 ozs.; and Sofala, 1788 ozs. The dredges at work at the end of 1909 totalled 66, of which 20 were of the bucket type and 46 were pumping plants. The value of the plants in operation (including recovery plants) was estimated at £309,833. The quantity of gold won from quartz amounted to 157,073 ozs. At the present time the Cobar district is the chief centre of the production from quartz, the yields from the Canbelego and Cobar fields included therein being respectively 43,197 ozs. and 35,009 ozs. Next comes the Murrumburrah field, with 11,390 ozs.; Araluen, 10,735 ozs.; Adelong, 10,321 ozs.; Wyalong, 9981 ozs.; Wellington, 7921 ozs.; and Peak Hill, 6984 ozs.

The table below shews the yield from alluvial and quartz working in each of the principal districts during 1909:—

***GOLD WON IN NEW SOUTH WALES, ALLUVIAL AND QUARTZ, 1909.**

District.	Alluvial.		Quartz.	Total.
	Other than by Dredging.	By Dredging.		
	ozs.	ozs.	ozs.	ozs.
Albert	353	...	1,517	1,870
Bathurst	1,686	76	10,166	11,928
Clarence and Richmond	165	...	696	861
Cobar	...	...	78,402	78,402
Hunter and Macleay	77	...	350	427
Lachlan	386	...	26,450	26,836
Mudgee	1,735	6,346	15,780	23,861
New England	221	...	464	685
Peel and Uralla	1,150	1,378	5,083	7,611
Southern	1,206	11,322	7,284	19,812
Tambaroora and Turon	2,084	6,176	545	8,805
Tumut and Adelong	2,451	10,870	10,336	23,657
Total	11,514	36,168	157,073	204,755

* These particulars are based on information obtained locally from mine and battery owners, and the total of the quantities specified in this table does not agree with the total production as obtained from the Mint and from export and import returns as shewn on page 496.

(ii.) *Victoria.* Quartz-reefing predominates in Victoria, although a considerable amount of gold is obtained from alluvial workings, both surface and deep leads. The deepest mines in Australia are found in the Bendigo district, where the two deepest shafts were at the 31st December, 1909, 4355 and 4318 feet deep respectively, while the bottom of the winze at the Victoria Reef Quartz was 4558 feet from the surface. Altogether there were at the close of 1909 no less than fifty-two shafts in this district which had reached a depth of over 2000 feet. A considerable amount of attention is given to dredging and hydraulic sluicing, particularly in the Beechworth, Gippsland, Castlemaine, and Ballarat districts, the number of plants in operation at the end of 1909 being 111, while 9 plants were in course of reconstruction or building. The total quantity of gold won

from dredge mining in 1909 was 88,339 ounces, and from sluicing 630 ounces, while the number of gold dredging and hydraulic sluicing leases in force at the end of the year was 234, extending over an area of 21,493 acres. The yields from alluvial workings and quartz reefs as returned (in crude ounces) from the chief mining districts of the State during last year were as follow:—

GOLD WON IN VICTORIA, ALLUVIAL AND QUARTZ, 1909.*

District.	Alluvial.	Quartz.	Total.
	ozs.	ozs.	ozs.
Ararat and Stawell	11,186	7,458	18,644
Ballarat	40,054	95,270	135,324
Beechworth	98,783	22,092	120,875
Bendigo	2,926	216,716	219,642
Castlemaine	22,539	53,651	76,190
Gippsland	6,985	42,872	49,857
Maryborough	50,136	30,747	80,883
Total	232,609	468,806	701,415

* As returned in crude ounces from chief mining districts.

The Virginia, Bendigo, was the largest yielding lode mine, with an output of 36,567 tons for 17,277 ozs., or an average or 9½ dwts. per ton; the greatest yielding deep alluvial mine was the Duke and Main Leads Consols, at Maryborough, with an output of 15,621 ozs.; the Tewksbury Amalgamated, working five dredges, heads the list of dredging and sluicing companies with a yield of 6356 ozs.

(iii.) *Queensland.* Operations in Queensland are at present chiefly confined to quartz reefing, the yield from alluvial in 1909 being only 10,288 ounces, while the quantity produced from quartz was 343,650 ounces; from copper and other ores 95,579 ounces; and from old tailings 6062 ounces; making a total production of 455,579 ounces, valued at £1,935,178. The yields from the principal fields are given below:—

GOLD WON IN QUEENSLAND, ALLUVIAL AND QUARTZ, 1909.

District.	Alluvial.	Quartz.	From Copper and other Ores and old Tailings.	Total.
	fine ozs.	fine ozs.	fine ozs.	fine ozs.
Charters Towers	720	164,282	6,652	171,654
Gympie	401	65,110	40	65,551
Mount Morgan	94	65,283	78,122	143,499
Ravenswood	236	28,491	...	28,727
Croydon	24	5,661	1,828	7,513
Clermont	3,767	159	39	3,965
Etheridge and Woolgar	3,857	5,773	2,396	12,026
Other districts	1,189	8,891	12,564	22,644
Total	10,288	343,650	101,641	455,579

(iv.) *South Australia.* In South Australia alluvial gold has been worked for many years in the gullies round Adelaide, while a fair amount of gold has been obtained by this method at Teetulpa, in the northern areas. There are some valuable reefing fields

in the Echunga district, at Mt. Grainger, Barossa, Wadnaminga, Mannahill, etc., but they have not been developed to the extent they deserve. Good stone was discovered a few years ago at Tarcoola, but the present returns are comparatively small. The rich finds at Arltunga in the centre of the continent, within the boundaries of the Northern Territory, have not yielded up to expectations, but the field has not been systematically prospected. It is stated that the gold occurs chiefly in vughs, crevices, and cellular quartz, the latter being at times exceedingly rich. The solid stone is low grade and is not worked. Operations are confined to the vein matter, which is passed through screens, and the larger lumps hand picked, the fines and all that contains vughs or cellular quartz being saved for treatment and the balance discarded. South Australia is not divided into mining districts as is the case in the other States. The Macdonnell Ranges, although within the boundaries of the Northern Territory and coming under the operation of the Northern Territory Mining Act, yet geographically belong to South Australia proper. All business is done from Adelaide and the administration of the Mining Act south of the 19th parallel of latitude is conducted by the Hon. Minister controlling the Northern Territory, with the help of a resident warden at Arltunga. The total output of gold for 1909 from the Northern Territory amounted to 7953 ounces, valued at £24,148.

(v.) *Western Australia.* In Western Australia the operations are confined principally to quartz reefing, the returns from ordinary alluvial and hydraulic sluicing being comparatively small. The total production of gold from all sources during last year was 1,595,270 ounces, of which only 0.5 per cent. was alluvial. The production of gold on the various goldfields during the year 1909 was as follows :—

GOLD WON IN WESTERN AUSTRALIA, ALLUVIAL AND QUARTZ, 1909.

Goldfields.	Alluvial.	Dollied and Specimens.	Crushed.	Total.
	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.
East Coolgardie	1,391	1,203	896,695	899,289
East Murchison	389	1,644	153,876	155,909
Mount Margaret	954	1,281	153,630	155,865
Murchison	894	2,301	129,911	133,106
North Coolgardie	188	584	78,627	79,399
Coolgardie	364	169	33,602	34,135
Dundas	32	1,582	27,935	29,549
North-east Coolgardie	370	908	24,184	25,462
Yilgarn	...	29	20,880	20,909
Broad Arrow	983	629	15,510	17,122
Peak Hill	60	452	7,407	7,919
Pilbara	1,390	256	5,118	6,764
Phillips River	3	34	6,677	6,714
Yalgoo	1	139	1,665	1,805
West Pilbara	531	...	1,009	1,540
Ashburton	436	...	...	436
Kimberley	135	...	...	135
Other goldfields	...	...	348	348
Total	8,121	11,211	1,557,074	1,576,406

The figures in the above table are compiled from returns from the individual mines and are somewhat incomplete ; the total is therefore less than the total shewn on page 496 from mint and export returns.

(vi.) *Tasmania.* The yield from Tasmania is also chiefly obtained from quartz reefing, although there is a little alluvial mining carried on in the Lisle district. The yields as returned from the chief centres in 1909 are shewn hereunder :—

GOLD WON IN TASMANIA, ALLUVIAL AND QUARTZ, 1909.

Description.	Northern & Southern.	North-eastern.	Eastern.	Western.	Total.
	ozs.	ozs.	ozs	ozs.	ozs.
Quartz	22,938	219	2,450	18,811*	44,418
Alluvial	240	329		65	634

* Gold contained in blister copper and silver-lead bullion.

The total production equalled 44,777 fine ounces, valued at £190,201.

5. **Remarkable Masses of Gold.**—The first "nugget" found in Australia was obtained at Hargraves, in New South Wales, on the 13th May, 1851, and weighed a little over 1 lb. In the same year the Burrandong nugget was found near Orange, weighing 2217 ozs. 16 dwts., and the "Brennan" was sold in Sydney for £1156. During the period 1880-82 nuggets weighing from 59 ozs. to 1393 ozs. were found at Temora. The "Jubilee," which weighed 347 ozs., was found in 1887.

In Victoria a nugget found at Canadian Gully in 1853 weighed 1620 ozs.; the "Welcome," found at Ballarat in 1858, weighed 2217 ozs.; and the "Welcome Stranger," unearthed in 1869 at Mount Moliagul, near Dunolly, weighed 2315 ozs., of which 2284 ozs. were fine gold and 31 ozs. silver, and was valued at £9534.

In addition to these alluvial nuggets large masses of gold have been found *in situ* in reefs. A mass known as "Kerr's Hundredweight," discovered in 1851 at Hargraves, in New South Wales, yielded 106 lbs. of gold. Probably the largest mass of gold ever found was obtained in Beyers and Holtermann's claim at Hill End in 1872. The total weight of the specimen, including the small amount of quartz in which it was encased, was 630 lbs. Its dimensions were 4 ft. 9 in. high, 2 ft. 2 in. wide, and about four inches thick. The value was not definitely known, but an offer of £13,000 was refused.

6. **Modes of Occurrence of Gold in Australia.**—(i.) *New South Wales.* The principal gold deposits worked with profit in New South Wales are classified by the Government Geologist of that State as follows:—(*a*) Alluvial or detrital gold. (*b*) Auriferous reefs or lodes. (*c*) Impregnations in stratified deposits, such as slate, quartzite, and volcanic tuff. (*d*) Impregnations in igneous rocks, such as granite, serpentine, felsite, etc. (*e*) Irregular deposits, such as bunches of auriferous ironstone. The detrital gold is found chiefly in Recent and Pleistocene alluvials, in beach sands along the coast, in Tertiary alluvial leads, in Cretaceous alluvial leads, and in Permo-carboniferous conglomerates. In the beach sands the gold is found in association with platinum and tin. In reefs the gangue is principally composed of quartz; calcide is often present, and barytes and fluor-spar are also met with. At Hill End gold was found associated with muscovite. In the oxidised portions of auriferous reefs, limonite, malachite, azurite, and cuprite are found, while below the water-line the veins are impregnated with iron pyrites, galena, copper pyrites, zinc blende, pyrrhotine, and stibnite. The auriferous quartz veins fall into three categories—fissure veins, bedded veins, and contact veins. Large masses of gold have occasionally been found in lodes, such as "Kerr's Hundredweight," alluded to in a preceding paragraph. The so-called saddle reefs in the Hargraves district are identical with those worked so profitably and at such great depths round Bendigo, in Victoria. Altogether gold has been found in association with over forty minerals in New South Wales, one of the most peculiar products being known as "mustard" gold, resultant on the decomposition of tellurides. The substance has the appearance of dull yellow clay, but it readily burnishes when pressed with a knife blade. Native gold has never been found in an absolutely pure state in New South Wales, being always alloyed with silver and also traces of other metals.

(ii.) *Victoria.* In Victoria the occurrence of gold is noted under two main headings —1. Matrix gold. 2. Redistributed gold. The so-called matrix gold occurs in quartz reefs of various kinds, in Ordovician, Silurian, and Lower Devonian sedimentary, metamorphic, and granitoid and porphyritic rocks; in reefs, veins, and lenticular deposits in dykes of granitoid, porphyritic, dioritic, and felspathic rocks, or between dykes and walls of intruded rocks; or in fracture planes or joints in granitoid rocks. Under the above conditions the gold is either free or in combination with iron, arsenic and iron, copper and iron, zinc, lead, antimony, silver, etc.

The redistributed gold is found in sands and gravels of existing streams, in deep leads, in littoral gravels and sands, and in cleavage and joint planes of rocks underlying the deep leads.

(iii.) *Queensland.* The most remarkable mode of occurrence in Queensland is that at the Mount Morgan mine, which presents so many novel features as to demand special reference. At this mine the siliceous material forming the ore body was found enclosed in igneous rock, which continued to the surface, except for a funnel-shaped mass of sandy beds and secondary ore outcropping near the summit of the mount. In a crevice of these sandy beds was deposited a plug of desert sandstone nearly 100 feet deep at its thickest part, with a surface area of three-fifths of an acre, quite distinct from and unconformable to, the beds of loose sand which underlay and surrounded it, and more ferruginous towards the outside than in the centre of its area. A ferruginous belt extended outside the plug, attaining a depth of 150 feet from the surface. It was hard and extremely rich in gold, which was disseminated through the stone in microscopic particles. Beneath the ironstone there was a band of loose sand or soft bed, in some places many feet in thickness, also extremely rich in gold. Underlying and almost surrounding the secondary ores, a great mass of siliceous and kaolin ore was found, denuded of its gold, which is supposed to have been leached out and conveyed in solution and again deposited in the enriched zone. The impoverishment prevails between the depths of 180 and 300 feet, the friable silicia being cellular from the removal of the pyrites. The evidences of the oxidisation and leaching action are greater towards the centre than along the walls of the mass. Below the skeleton ore an unaltered zone of copper sulphide ore was found, in which gold was irregularly distributed, the copper increasing with the depth. Outside both sulphide and skeleton ore are walls of crystalline igneous rocks. Dykes, later than the massive igneous rocks but older than the enriched zone, traverse the siliceous sulphides in various directions. The theory advanced by Dr. Jack that the formations at Mount Morgan were due to geyser action at one time found wide acceptance, but later investigations tend to discredit it. So far, however, no completely satisfactory explanation has been put forward.

(iv.) *Western Australia.* The Government Geologist of Western Australia classifies the conditions under which gold is found in that State as follows:—(*a*) Native metal. (*b*) Compounds with tellurium and other elements. (*c*) Associated with other minerals.

Native gold occurs in several different forms, to which popular names descriptive of their appearance have been given, such as crystalline, dendritic, rough, flake, mustard, and sponge gold. Tellurides of gold abound at Kalgoorlie and Mulgabbie. Calverite is the most frequently occurring mineral, but petzite, goldschmidtite, and the minerals termed kalgoorite and coolgardite are also found. Of the metallic minerals, iron in the form of iron pyrites and oxides is widely distributed. Galena comes next, whilst amongst other minerals found in association with the precious metal may be mentioned zinc blende, arsenopyrite, vanadinite, bismuth pyrrhotite, chalcopyrite, bourononite, copper, scheelite. Quartz is of course the commonest of the earthy secondary minerals, but calcite, chalcedony, gypsum, actinolite, chlorite, and others are also found in association with gold. Some of the native gold is found to be remarkably pure, specimens of sponge gold from lodes at Boulder, Kalgoorlie, and East Coolgardie being found to contain 99.91 per cent. of the precious metal with but 0.09 per cent. of silver.

7. **Place of Commonwealth in the World's Gold Production.**—In the table given below will be found the estimated value of the world's gold production, and the share of the Commonwealth therein during the thirteen years 1897 to 1909. The figures given in the table have been compiled chiefly from returns obtained direct by the Commonwealth Bureau of Census and Statistics from the gold-producing countries of the world.

WORLD'S GOLD PRODUCTION, 1897 to 1909.

Year.	World's Production of Gold.	Gold produced in Commonwealth.	Percentage of C'wealth on Total.
	£	£	%
1897	48,196,000	9,890,000	20.52
1898	58,136,000	11,679,000	20.09
1899	63,015,000	14,533,000	23.06
1900	52,086,000	13,578,000	26.07
1901	53,339,000	14,006,000	26.26
1902	60,619,000	14,812,000	24.43
1903	66,761,000	16,295,000	24.41
1904	70,554,000	15,897,000	22.53
1905	76,839,000	15,551,000	20.24
1906	83,180,000	14,632,000	17.59
1907	84,770,000	13,515,000	15.94
1908	90,370,000	13,059,000	14.45
1909	91,910,000	12,605,000	13.71

The latest published estimates place the world's gold yield at about 92 millions sterling in 1909, towards which the Commonwealth contributed 12½ millions, or about 13¾ per cent. While the production of gold in the Commonwealth rose by about 27½ per cent. in the thirteen years from 1897 to 1909, the world's total increased by about 90 per cent. in the same period. The following table will be found interesting, as shewing the various foreign countries where the chief increases have taken place during the interval in question:—

INCREASE IN GOLD YIELD, VARIOUS COUNTRIES, 1897 to 1909.

Country.	1897.	1900.	1907.	1908.	1909
	£	£	£	£	£
United States ...	11,787,000	16,269,000	18,583,000	19,566,000	20,418,000
Canada ...	1,240,000	5,742,000	1,725,000	2,025,000	1,930,000
Mexico ...	2,045,000	1,884,000	3,733,000	4,137,000	4,582,000
Transvaal ...	11,654,000	1,481,000	27,401,000	29,973,000	30,988,000
Rhodesia ...	800	308,000	2,179,000	2,526,000	2,624,000
Gold Coast ...	85,000	38,000	1,164,000	1,195,000	979,000
Madagascar ...	8,500	142,000	267,000	345,000	434,000
India	1,571,000	1,893,000	2,134,000	2,178,000	2,070,000
Korea ...	208,000	371,000	471,000	480,000	480,000*
Japan ...	142,000	290,000	396,000	457,000	520,000
Java	24,000	112,000	479,000	610,000	630,000
Costa Rica ...	2,000	31,000	70,000	122,000	122,000*

* Not available; previous year's figures taken.

The largest increase was recorded in the Transvaal, where the production nearly trebled itself in the thirteen years 1897 to 1909.

The number of persons engaged in gold mining in each State during the last nine years is shewn in the following table:—

PERSONS EMPLOYED IN GOLD MINING, 1901 to 1909.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Cwlth.
	No.	No.	No.	No.	No.	No.	No.
1901	12,064	27,387	9,438	1,000	19,771	1,112	70,772
1902	10,610	26,151	9,045	1,000	20.476	1,038	68,320
1903	11,247	25,208	9,229	1,000	20,716	973	68,373
1904	10,648	24,331	9,620	1,000	18,804	1,076	65,479
1905	10,309	25,369	10,641	900	18,382	1,207	66,808
1906	8,816	25,304	9,842	900	17,926	988	63,776
1907	7,468	23,291	8,883	914	17,237	953	58,746
1908	6,363	20,853	7,736	1,213	16,075	843	53,083
1909	5,585	18.671	7,150	1,177	17,027	713	50,323

§ 3. Platinum and the Platinoid Metals.

1. **Platinum.**—The existence of platinum was first noted in New South Wales in 1851 by Mr. S. Stutchbury, who found a small quantity near Orange. Since the year 1878 small quantities of the metal have been obtained from beach sands in the northern coastal district. Platiniferous ore was noted in 1889 at Broken Hill. The chief deposits at present worked in the State are situated at Fifield, near Parkes, but the entire production in 1909 was small, amounting to only 440 ozs., valued at £1720, while the total production recorded to the end of 1909 amounted to 11,578 ozs., valued at £20,713. The matter of treating the extensive surface deposits received further attention during the year, but the difficulty of securing the necessary supply of water has not been surmounted. In September, 1909, the price paid locally for the platinum was increased from £2 17s. 6d. to £3 15s. per ounce. Attempts were made by a French company to treat the sands in the vicinity of Jerusalem Creek in the Woodburn division, but it is represented that it was found that a larger plant is necessary to enable operations to be conducted at a profit; work was therefore suspended for the purpose of raising additional capital.

In Victoria the metal has been found in association with copper at the Walhalla Copper Mine in Gippsland, but the mine is not at present being worked. The metal has also been found in small quantities in black sand beaches in the Otago district of New Zealand, and is present in the alluvial wash at Takaka, Nelson. Up to the present, however, the production has been trifling.

2. **Osmium, Iridium, etc.**—Small quantities of osmium, iridium, and rhodium are also found in various localities. As far back as 1860, the Rev. W. B. Clarke states that he found native iridium. Platinum, associated with iridium and osmium, has been found in the washings from the Aberfoil River, about 15 miles from Oban, on the beach sands of the northern coast; in the gem sand at Bingara, Mudgee, Bathurst, and other places. In some cases, as for example in the beach sands of Ballina, the osmiridium and other platinoid metals amount to as much as 40 per cent. of the platinum, or about 28 per cent. of the whole metallic content.

In Victoria, iridosmine has been found near Foster, and at Waratah Range, South Gippsland.

§ 4. Silver.

1. **Discovery in Each State.**—(*a*) *New South Wales.* The occurrence of silver in New South Wales was first mentioned by Count Strzelecki in a letter addressed to Captain King, R.N., dated the 26th October, 1839. In his work, "The Southern Goldfields," published in 1860, the Rev. W. B. Clarke also mentions a discovery of the metal. Since that date silver has been found in a large number of localities throughout

the State. The Broken Hill field, the chief lode on which was discovered in 1882 by Mr. Charles Rasp, constitutes one of the richest and most productive mining centres in the world. Further reference to the production from the Broken Hill district will be made on a subsequent page. Amongst other important finds in New South Wales may be mentioned Boorook, near Tenterfield, discovered in 1878; Sunny Corner, originally worked for gold in 1875; Emmaville, 1884; Rivertree, on the Clarence River, 1887; Borah Creek, near Inverell, 1870; Rockvale, 1895.

(*b*) *Victoria.* Mining for silver is not carried on to any extent in Victoria, the production recorded in the mining returns being chiefly obtained in the process of refining gold, and the same applies in the case of the production from Western Australia.

(*c*) *Queensland.* In Queensland most of the important gold mines yield also supplies of silver, but the credit of establishing the silver mining industry *per se* belongs to the Ravenswood field, where in 1879 the recovery of a parcel of 40 tons of galena assaying 130 ozs. of silver to the ton, marked the opening of the industry. At Chillagoe in 1884 there were thirty-two silver lead shows being worked, while during the decade 1885-1895 over 1½ million ozs. were raised at the Mount Albion mine. The Girofla mine in the Mungana group is at present producing large supplies of silver lead ore of high grade. The output of ore from the Silver Spur mine at Texas to the end of 1909 was 66,000 tons, the ore treated averaging from 26 to 35 ozs. of silver per ton; the ore deposits in this vicinity are reckoned to be the richest in Southern Queensland. In 1909 the total quantity of silver produced in Queensland was 1,001,383 ozs., valued at £99,093.

(*d*) *South Australia.* In South Australia, silver lead is found in the main range, south of Adelaide. The Wheal Gawler mine, near Glen Osmond, opened in 1841, was probably the first mine worked in the Commonwealth. Silver lead deposits have also been noted north-east from Farina and west from Beltana. A small amount of silver lead is also obtained in the Northern Territory.

(*e*) *Tasmania.* Tasmania is the only State in the Commonwealth besides New South Wales which produces any considerable quantity of silver. The famous Zeehan mine, on the west coast, was discovered in 1885, and the deposits at Heazlewood River in 1887. Both districts are still opening up rich deposits of ore.

2. **Development of Silver Mining.**—In illustration of the development of silver mining in Australia the following table has been compiled, shewing the production of silver, silver lead and ore, and lead from each State during the years 1881, 1891, and 1901 to 1909:—

PRODUCTION OF SILVER AND LEAD, AUSTRALIA, 1881 to 1909.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
1881 ...	...	5,239	13,494	1,182	11,224	...	31,139
1891 ...	3,621,614	6,017	21,879	5,927	250	62,138	3,717,825
1901 ...	1,954,964	6,550	69,234	3,886	7,718	325,335	2,367,687
1902 ...	1,487,837	4,900	72,851	42,063	9,467	387,024	2,004,142
1903 ...	1,539,989	4,898	109,177	10,870	19,153	428,125	2,112,212
1904 ...	2,131,504	4,990	96,418	1,387	45,912	318,971	2,599,182
1905 ...	2,496,709	4,100	102,388	3,244	44,278	415,248	3,065,967
1906 ...	2,864,057	4,980	151,577	12,982	37,612	552,704	3,623,912
1907 ...	4,290,128	4,355	187,870	13,873	26,674	572,560	5,095,460
1908 ...	2,346,941	2,835	206,716	9,030	23,883	322,007	2,911,412
1909 ...	1,839,688	2,310	167,636	673	19,977	298,880	2,329,164

The figures quoted for New South Wales in the above table represent the *net* value of the product (excluding zinc) of the silver-lead mines of the State. In explanation of the values thus given, it must be noted that the metallic contents of the larger portion of the output from the silver-lead mines in the State are extracted outside New South Wales, and it is considered, therefore, that the State should not take full credit for the finished product. Hence the *net* value referred to above relates to that of the ore, concentrates, and bullion, as declared by the several companies to the Customs Department at date of export. The real importance of the State as a producer of silver, lead, and zinc is thus to some extent lost sight of. The next table, however, which indicates the quantity and value of these metals locally produced, and the quantity and value of concentrates exported during the last six years, will shew the estimated total value of the yield:—

VALUE OF PRODUCTION FROM SILVER-LEAD MINES OF NEW SOUTH WALES, 1904 TO 1909.

Year.	Value of Silver, Lead, and Spelter produced within the C'wealth.	Value of Concentrates Exported.	Total.
	£	£	£
1904	2,088,784	642,125	2,730,909
1905	2,131,317	1,181,720	3,313,037
1906	2,112,977	1,876,834	3,989,811
1907	2,228,420	3,574,775	5,803,195
1908	2,008,410	2,400,997	4,409,407
1909	1,176,394	2,707,680	3,884,074

As regards silver alone, the following table, which has been prepared on a basis similar to that on which the preceding table was compiled, shews the estimated total quantity and value of that metal yielded by the mines of New South Wales up to the end of 1903 and during the last six years:—

ESTIMATED QUANTITY AND VALUE OF SILVER YIELDED BY MINES OF NEW SOUTH WALES, TO END OF 1909.

Period.	Produced in Australia.		Contained in Concentrates, etc., Exported.		Total Production.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Fine ozs.	£	Fine ozs.	£	Fine ozs.	£
To the end of 1903 ...	82,947,404	13,807,421	104,659,834	18,330,147	187,607,238	32,137,568
1904	7,751,667	920,947	2,945,058	349,891	10,696,725	1,270,838
1905	6,804,934	852,533	3,480,561	436,050	10,285,495	1,288,583
1906	5,575,410	775,409	3,111,013	432,669	8,686,423	1,208,078
1907	5,921,457	795,982	6,228,225	845,845	12,149,682	1,641,827
1908	6,484,288	693,034	5,499,381	587,768	11,983,669	1,280,802
1909	3,717,016	382,605	6,867,775	732,563	10,584,791	1,115,168
Total	119,202,176	18,227,931	132,791,847	21,714,933	251,994,023	39,942,864

The decrease in the value of the production for 1908 was chiefly due to the fact that operations in the Broken Hill field were conducted on a considerably restricted scale. The fall in the price of metals resulted in several of the mines in this field being closed down in 1908, while other mines curtailed development and productive work. The further decrease in 1909 is attributable to labour troubles. The Broken Hill strike extended over the first five months of the year, and involved principally two large producing mines, viz., the Proprietary and Block 10. In the case of the former mine, underground work was not resumed during the whole year, as it was considered that the current prices of metals did not permit of the profitable extraction of the ore, in view of the rates of wages

fixed by the Commonwealth Arbitration Court. The ore mined at the Broken Hill field was consequently 417,217 tons less than in the previous year, while the gross value of the output dropped from £3,215,325 to £2,611,189. In Tasmania the decrease was principally owing to the temporary stoppage of the Tasmanian Smelting Company's works, followed by the closing down of the Magnet and Hercules mines. The output of the Yerranderie field in New South Wales was not so large as in the previous year, operations being restricted owing to transport difficulties.

3. **Chief Centres of Silver Production.**—Broken Hill, in New South Wales, and Zeehan, in Tasmania, are the great centres of silver production in Australasia. The production in Queensland has, however, considerably expanded during the last few years.

(i.) *New South Wales.* (*a*) *Broken Hill.* The bulk of the production is, of course, from New South Wales, being contributed mainly by the mines in the celebrated Broken Hill district.

At Broken Hill a considerable quantity of high-grade ore has been found at or near the surface, while shafts and drives have been put in along the lode to intersect ore bodies at greater depths. The deepest shaft on the field is on Block 10, where a depth of 1490 ft. has been reached, while shafts at the Proprietary and Junction North have been put down to a depth of 1300 and 1200 ft. respectively. Broken Hill itself consists of a low range about two miles in length, composed of crystalline gneisses passing into banded quartzites, micaceous and hornblendic schists, and garnetiferous sandstones. The rocks are bent into an anticlinal fold, the axis being coincident with the crown of the range, and the strata dipping away on each side almost parallel to the surface of the slope. The lode occupies the saddle-shaped cavity formed by the contortion of the strata, and its outcrop is coincident with the highest part of the range for about a mile and a half in length. Practically the whole of this outcrop has been removed in an open cut varying in width from 20 to 100 ft. The outcrop was composed of massive manganiferous limonite associated with siliceous and aluminous material, and containing numerous vughs bearing cerussite, chloride, iodide, and bromide of silver and stalactites of psilomelane. The iron ore contained from 2 to 30 ozs. of silver to the ton and from 10 to 25 per cent. of lead, and was extremely useful in fluxing the siliceous ores beneath it. Underneath the ironstone were found (1) deposits of carbonate of lead and a gangue composed of siliceous and aluminous material containing manganiferous iron oxide; (2) other high-grade ores containing kaolin, garnets, quartz with native silver, and also chlorides, chloro-bromides, and iodides, and yielding 4 to 300 ozs. of silver to the ton and a small quantity of lead; (3) a dry low-grade ore yielding from 5 to 40 ozs. to the ton. Below these so-called oxidised ores the lode consisted of rich sulphides containing galena, zinc blende, quartz, garnet, rhodonite, felspar, iron and copper pyrites, and small quantities of mispickel, wulfenite, and fluorspar. The sulphide ore contains from 6 to 36 ozs. of silver and 2 to 3 dwts. of gold to the ton, from 5 to 50 per cent. of lead, and 14 to 30 per cent. of zinc.

In addition to the cessation of operations at the Proprietary and Block 10 mines owing to labour troubles, to which reference has already been made, the British mine was closed down during the whole year, owing, it is stated, to the price of metals being too low to permit of the company conducting operations under existing conditions at a profit. At the Junction mine also no productive work was carried on during the year. In these circumstances the aggregate output of ore—1,030,287 tons in 1909, as against 1,447,504 tons in the preceding year—must be regarded as satisfactory and as furnishing evidence of the potentialities of the mines. Recoveries of metals have been higher than in previous years, much better results being secured by the new and improved milling plants in operation. Towards the end of the year, when the industry was rapidly recovering from the set-back which it had received, the strike of the coal-miners in New South Wales, and the consequent shortage of fuel, were the means of putting a large

number of miners on the Broken Hill field out of employment. Although the returns are not complete in all cases, the following table relating to the mines at Broken Hill will give some idea of the richness of the field :—

RETURNS OF BROKEN HILL SILVER MINES, 1909.

Mine.	Authorised Capital.	Value of Output to end of 1909.	Dividends and Bonuses Paid to end of 1909.
	£	£	£
Broken Hill Proprietary Co. Ltd.	384,000	32,374,233*	9,752,000†
Broken Hill Proprietary Block 14 Co. ...	155,000	3,228,101	446,827
British Broken Hill Proprietary Co. ...	264,000	1,993,616	337,500
Broken Hill Proprietary Block 10 Co. ...	1,000,000	3,574,220	1,205,000
Sulphide Corporation Ltd. (Central Mine) ...	1,100,000	10,043,351	653,125
Broken Hill South Silver Mining Co. ...	200,000	3,307,000	675,000
North Broken Hill Mining Co.	140,000	1,180,169	228,440
Broken Hill Junction Mining Co.	100,000	797,673	85,000
Broken Hill Junction North Silver Mining Co.	180,000	685,767	25,793
Broken Hill South Blocks Ltd.	200,000	405,867	...
Broken Hill South Extended Ltd.	337,500	150,344	50,000
Totals	4,060,500	57,740,341‡	13,458,685

* The value of the ores purchased during 1908 and 1909 is not included. † Excluding nominal value of shares in Block 14, British, and Block 10 Companies, allotted to shareholders of the Proprietary Company and amounting to £1,744,000. ‡ Owing to incompleteness of the returns, these figures understate the total value of output.

(*b*) *Yerranderie and Conrad Stannite.* The mines on the Yerranderie field in the Southern Mining District produced 719,264 ozs. of silver in 1909, besides small quantities of gold and lead. This yield, although falling short of that of the previous year (828,129 ozs.), is such as to emphasise the importance and possibitities of the field. It is stated that mining operations are carried on under considerable difficulties owing to the heavy cost of transport, and that the advent of a railway (the construction of which is proposed) would completely change the outlook. Increased activities were evinced during the year in the operations at the silver mines in the Burrowa, Yass, and Cootamundra divisions. The total production in 1909 was valued at £99,374, as compared with £114,029 in 1908.

(ii.) *Tasmania, West Coast.* The silver-lead mines on the west coast are now well established. Amongst the most important are the Mt. Zeehan, Zeehan-Montana, Zeehan-Western, Oonah, Comet, Hercules, Adelaide, North Mt. Farrell, and Tasmanian Copper. The total production of silver-lead ore in 1909 was 80,378 tons, valued at £298,880, as against 63,167 tons, valued at £322,007, in 1908. The production for these two years was considerably lower than for 1907, viz., £572,650, owing to the temporary stoppage of the Tasmanian Smelting Company's works, followed by the temporary closing down of the Magnet and Hercules mines.

(iii.) *Queensland.* Notwithstanding that ore shipments from the Lady Jane mine ceased shortly after the fall of ground in that mine in February, 1909, the Mungana (Chillagoe) Company's copper shipments to the Chillagoe smelter totalled 6386 tons, the gross contents being—silver, 73,165 ozs., and copper, 304 tons. The lead shipments amounted to 28,973 tons, the gross contents being 389,386 ozs. of silver and 1425 tons of copper, of a total value of £153,381. It is believed that silver lead will also prove an important factor in the development of the Etheridge goldfield.

4. **World's Production of Silver.**—The world's production of silver during the last nine years is estimated to have been as follows :—

WORLD'S PRODUCTION OF SILVER, 1901 to 1909.

Year	1901.	1902.	1903	1904	1905.	1906	1907.	1908.	1909.
World's production* in 1000 fine ozs.	174,851	163,937	173,222	176,840	181,338	184,552	183,386	212,570	217,615

* Add 000 to figures for fine ounces.

The Commonwealth's share in the world's silver production in 1909 was estimated at 15,923,320 ounces, or about 7¼ per cent. on the total production.

5. **Prices of Silver.**—As the production of silver is dependent to a very large extent on the price realised, a statement of the average price per standard ounce paid by the London Mint at various periods and during the last six years is given below.

PRICES OF SILVER, 1871 to 1909.

Year	1871.	1881	1891.	1901.	1904.	1905.	1906.	1907.	1908.	1909.
Pence per standard oz....	60½	51 11/16	45 1/16	27 3/16	26⅜	27 5/16	30⅞	28 5/16	24½	23 15/16

During the month of November, 1906, owing to the small sales in New York, and also to the fact that the Indian, American, and Mexican Governments were all buying silver, the price rose to 33⅛d., the highest realised since 1893, when the average stood at 36 5/16d.

6. **Employment in Silver Mining.**—The number of persons employed in silver mining during each year of the period 1901 to 1909 is given below :—

NUMBER OF PERSONS EMPLOYED IN SILVER MINING, 1901 to 1909.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania	C'wealth.
	No.	No.	No.	No.	No.	No.	No.
1901	6,298	...	40	150	...	2,414‡	8,902§
1902	5,382	...	100	150	...	2,893‡	8,525§
1903	6,035	...	458	150	...	1,681‡	8,324§
1904	7,071	...	45	50	...	1,101	8,267
1905	7,887	...	293	50	...	1,512	9,742
1906	9,414	13	282	50	...	1,745	11,504
1907	10,021	10	785	86	8	1,908	12,818
1908	7,560	3	496	51	5	1,740	9,855
1909	6,207	...	354	40	5	1,516	8,122

‡ Including copper miners. § Including copper miners in Tasmania.

As the table shews, the bulk of the employment was in New South Wales and Tasmania, the quantity of silver raised in the other States, excepting Queensland, being unimportant.

§ 5. Copper.

1. **Production of Copper.**—The production of copper in the various States of the Commonwealth has been influenced considerably by the ruling prices, which have fluctuated in an extraordinary way. In 1908 the ruling price of the metal remained so consistently low that the progress of operations was seriously affected, and companies, which in previous years were important producers, found that they were unable to adjust their economies to suit the conditions, and were compelled to suspend work. The quantity and value of the production in earlier years and for 1905 to 1909 is shewn in the following tables :—

PRODUCTION OF COPPER, AUSTRALIA, 1881 to 1909.

State.	1881.	1891.	1901.	1905.	1906.	1907.	1908.	1909.
QUANTITY.								
	Tons.	Tons	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
N.S.W. ... Copper	*	*	6,087	7,962	8,964	8,963	8,679	6,857
N.S.W. ... Ore	*	*	645	630	791	1,135	392	109
Victoria... Copper & Ore	*	*	...	...	...	38	983	17
Q'land ... Copper	330	85	3,061	7,221	10,077	12.756	14,961	14.494
S. Aust. ... Copper	3,824	3,551	6,736	11,100	8,406	8,763	6,152	114,019
S. Aust. ... Ore	21,638	13,239	2,353	...	527	...		1,345
W. Aust.... Copper	...	...	...	...	...	1,602	479	833
W. Aust.... Ore	...	*	10,157	2,389	7,430	3,727	2,503	6,959
Tasmania Copper	...	...	9,730	8,558	8,613	9,035	8,833	8,638
Tasmania Ore	...	...	10,029	4,016	2,235	...	1,185	1,588
C'wealth Copper	...	...	25,614	34,841	36,060	46,019	44,167	154,859
C'wealth Ore	...	...	23,184	7,035	10,983			
VALUE.								
	£	£	£	£	£	£	£	£
New South Wales...	227,667	119,195	412,292	527,403	789,527	727,774	502,812	424,737
Victoria	8,186	216	...	...	...	2,356	3,928	44
Queensland ...	19,637	3,554	194,227	503,547	916,546	1,028,179	893,535	853,196
South Australia ...	418,296	235,317	500,077	483,431	743,671	705,031	345,968	342,329
Western Australia	...	4,463	75,246	16,266	50,337	203,376	57,091	104,644
Tasmania	...	...	1,026,748	563,275	844,663	869,665	609,651	608,038
Commonwealth	673,786	362,745	2,208,590	2,093,922	3,344,744	3,536,382	2,412,985	2, 332,

* Not available.

2. **History.**—(i.) *New South Wales.* It is believed that copper was the first metal mined for in New South Wales, the earliest attempts at working taking place about the year 1844. The deposits at Copper Hill, near Molong, were worked in 1845, as well as those in the neighbourhood of Canowindra. In 1847 mining for copper was commenced at the Summerhill Estate, near Rockley. The Rev. W. B. Clarke reported the discovery of copper ores near Marulan in 1851, and at Quidong, in the Snowy River district, in 1852. The Mount Hope field was opened in 1878, Nymagee in 1880, and Lake George in 1882. The principal seat of the copper-mining industry at the present date is in the Cobar district, the value of the deposits there being first recognised in 1869. The value of the output of the Cobar district in 1909 was £253,378, out of a total for the State of £424,737, which is £78,075 less than the total for the previous year. Operations at the Great Cobar mine were, however, interrupted by a strike of tappers, and this, in conjunction with a shortage of fuel, was responsible for the suspension of smelting operations from the 17th November. The Nymagee, Mount Hope, and Girilambone mines in the Cobar division did not resume work during the year.

From the Grafton Company's mine at Cangai a considerably augmented output was supplied, and this mine secured the position for the year as second largest producer of

copper in the State. The Kyloe mine in the Cooma division also furnished a very satisfactory output. The Electrolytic Refining and Smelting Company of Australia Limited commenced active operations at Port Kembla, and during the year produced 5851 tons of electrolytic copper. This was, however, mostly obtained by the treatment of mattes and ores imported from other States, the quantity of copper won from the products of the mines of the State being only 697 tons.

(ii.) *Victoria.* In Victoria copper has been found at Bethanga, Sandy Creek, near Bogong, Walhalla on the Thomson River, and on the Snowy River and at Mount Tara near Buchan, but there are no mines at present being worked for their copper contents.

(iii.) *Queensland.* The first important discovery of copper in Queensland was made in the year 1862, when a rich lode was found near Clermont, on the Peak Downs. A further discovery was made during the same year at Mount Perry. Copper, tin, silver, and gold were found on the Herberton, Walsh, and Tinaroo mineral fields in 1879. The famous Mount Morgan gold mine, discovered in 1882, also produces a considerable amount of copper, the production therefrom in 1909 exceeding that from any other district. The production in 1909 from the more important districts was as follows:—Mount Morgan, £369,081; Herberton, £12,832; Mount Perry, £39,439; Cloncurry, £90,342; Rockhampton, £74,993; the total quantity of copper produced in Queensland in that year being 14,494 tons, valued at £853,196.

(iv.) *South Australia.* Taking the entire period over which production extended, the yield of copper in South Australia easily outstrips that of any other State in the Commonwealth. In recent years, however, Tasmania, Queensland, and New South Wales have come to the front as copper producers, as the table on the preceding page will shew. Deposits of copper ore are found over a large portion of South Australia. The Kapunda mine, discovered in 1842 by Messrs. Dutton and Bagot, is situated fifty miles north of Adelaide, and is the oldest copper mine in the State. Up to the end of 1879 the production amounted to 70,000 tons, the metal possessing such a high standard of purity that it always obtained the highest prices in the world's markets. During the nine years 1870 to 1878 the production was valued at £157,000. The Burra Burra mine, located in 1845 by a shepherd named Pickett, is situated about 100 miles north of Adelaide. The original capital invested in this mine was £12,320 in £5 shares, on which no call was ever made, while dividends to the amount of £800,000 were paid. For many years this mine produced from 10,000 to 13,000 tons of ore, averaging 22 to 23 per cent. of copper. During the 29½ years in which the mine was worked the production was valued at £4,749,000. In 1859 as many as 1170 persons were employed on it. The mine has lain practically idle for many years, but recently there have been attempts at re-working.

Yorke's Peninsula, between Spencer's Gulf and St. Vincent's Gulf, contains a large area of copper-bearing country. The principal mines at Wallaroo and Moonta are situated a few miles from Port Wallaroo, and date back to 1860. For about thirty years the Moonta mines were worked independently, selling their ores to the Wallaroo company. During its separate existence the Wallaroo field produced about £2,600,000 worth of copper, while Moonta yielded £5,396,000, and was the first Australian mining field to produce £1,000,000 in dividends. The amalgamation took place in 1889, and since that year the united properties have produced about £4,281,000 worth of copper. The entire yield from the date of first working is estimated at about £12,500,000. The mines just enumerated represent a very small proportion only of those opened on the copper-bearing areas of the State. Owing to the depression in the price of copper in 1908 many promising mines in South Australia suspended working and in others operations were much curtailed. Developmental and other work is proceeding at Yudnamutana, Mutooroo, Callington, and other places.

Copper is also obtained in the Northern Territory; the actual output of ore for the year, however, was only £3742 in value. This poor result was entirely due to the low prices and high cartage rates from outlying fields from which, in the main, copper is produced.

(v.) *Western Australia.* The inception of active mining operations in Western Australia dates from the year 1842, when lead and copper mines were discovered in the Northampton district, but working was carried on in a most perfunctory manner in the early days, sinking being discontinued as soon as the lodes shewed signs of contraction. Rich lodes of copper have been located at Whim Creek, in the Pilbara district, about fifty miles eastward of Roeburne, the copper ore being removed by quarrying. Promising lodes have also been struck at the Irwin mines, between Arrino Springs and the Irwin River. The Kimberley district is intersected in places by copper and lead deposits in association with gold, and a rich lode has been located at Mount Barren, about 120 miles to the eastward of Albany, while various quartz reefs in the Wongan Hills contain copper in association with gold and iron. The largest producers in 1909 were the Phillips River goldfield, the production being 7331 tons copper ore, valued at £29,815, and the West Pilbara field, which yielded 7136 tons of copper ore, valued at £62,447. Other fields producing this mineral were the Nannine district of the Murchison goldfield and the Ashburton goldfield.

(vi.) *Tasmania.* For a long time Tasmania was the largest producer of copper in the Commonwealth, but during the last four years Queensland has occupied the premier position. The cupriferous area in the island State stretches from Mount Lyell, Mount Tyndall, Mount Read, and Mount Murchison, in the western district, to some distance north of the Pieman River. Copper mining has also been started on the North-west Coast, notably in the Stowport and Blyth River districts, and some attention has been given to the deposits at Rocky Cape and Boat Harbour. In 1909 the output of the Mount Lyell Mining and Railway Co. Ltd. was 8638 tons of blister copper, which contained copper valued at £516,682, silver £69,736, and gold £56,993. This company during the year paid £315,000 in dividends. A new copper field at Mount Balfour is attracting considerable attention. A number of sections have been taken up and are being systematically prospected.

The output for the year 1909 was valued at £608,038, which was £1613 less than the previous year, and £261,628 less than that of 1907. Several of the mines which in past years were large producers remained closed down during the whole of 1909, while, taken generally, work at other mines throughout the Commonwealth was, for a variety of reasons, only conducted on a limited scale.

3. **Price of Copper.**—The great variation in price that the metal has undergone is shewn in the following table of prices realised for standard and best selected copper since 1897:—

FLUCTUATION IN THE VALUE OF COPPER, 1897 to 1908.

Year.	Average Price of Copper per Ton.						Year.	Average Price of Copper per Ton.					
	Standard.			Best Selected.				Standard.			Best Selected.		
	£	s.	d.	£	s.	d.		£	s.	d.	£	s.	d.
1897	49	2	6	52	5	6	1905—Jan. to June	67	2	1	71	3	9
1898	51	16	7	55	8	3	July to Dec.	72	1	11	77	7	11
1899	73	13	9	78	2	3	1906—Jan. to June	82	2	8	86	18	11
1900	73	2	5	78	9	1	July to Dec.	92	15	1	97	11	1
1901	66	19	1	73	8	2	1907—Jan. to June	103	4	4	111	8	4
1902	52	8	3	56	12	7	July to Dec.	70	18	10	76	0	6
1903	58	3	2	62	13	8	1908—Jan. to June	59	0	9	62	5	10
1904	59	0	7	62	13	0	July to Dec.	61	1	0	64	4	3

There is no doubt that the steady rise in the price of copper from the year 1902 onwards caused a large amount of overtrading with consequent unhealthy inflation of values, while the sudden drop in 1907 was directly due to the financial panic in America. It is believed, however, that the increasing demand for the metal in electrical

and other industries will, under ordinary circumstances, tend to establish prices on a sounder basis, and at higher rates than those quoted for the last twelve months in the table above.

4. **Relationship to World's Production.**—The world's production of copper in 1901 and during the last five years is estimated to have been as follows:—

WORLD'S PRODUCTION OF COPPER, 1901 to 1909.

Year	1901.	1905.	1906.	1907.	1908.	1909.
World's production (short tons) ...	583,517	770,221	788,492	796,366	744,600	844,100

5. **Employment in Copper Mining.**—The number of persons employed in copper mining during the last nine years was as follows:—

PERSONS ENGAGED IN COPPER MINING, 1901 to 1909.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	No.	No.	No.	No.	No.	No.	No.
1901 ...	2,964	4	814	4,000	321	*	8,103†
1902 ...	1,699	...	666	4,000	113	*	6,478†
1903 ...	1,816	...	1,418	4,000	193	*	7,427†
1904 ...	1,850	...	1,094	4,000	169	925	8,038
1905 ...	2,171	...	1,435	4,500	125	2,269	10,500
1906 ...	3,047	3	2,598	5,000	296	2,391	13,335
1907 ...	3,764	10	3,941	5,254	611	2,614	16,194
1908 ...	2,745	9	3,540	4,558	283	2,076	13,211
1909 ...	2,024	2	3,241	4,504	497	2,038	12,306

* Included with silver miners. † Excluding Tasmania.

§ 6. Tin.

1. **Production of Tin.**—The development of tin mining is, of course, largely dependent on the price realised for the metal, and, as in the case of copper, the production has been subjected to somewhat violent fluctuations. The table below shews the production in each of the Commonwealth States during the years 1881, 1891, 1901, and 1905 to 1909:—

TIN PRODUCED IN AUSTRALIA, 1881 to 1909.

State.		1881.	1891.	1901.	1905.	1906.	1907.	1908.	1909.
QUANTITY.									
		Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
New South Wales	Ingots	5,824	1,454	648	1,170	1,161	1,331	954	951
	Ore	609	203	11	786	510	583	841	992
Victoria	Ore	‡	‡	77	124	106	104	79	89
Queensland* ...	Ore	‡	‡	1,661	3,945	4,823	5,140	4,885	3,326
South Australia ...	Ore	...	‡	81	295	398	436	441	427
West Australia	Black tin	...	‡	734	1,079	1,495	1,502†	1,093†	698†
Tasmania	Ore	‡	‡	1,790	3,892	4,473	4,343	4,521	4,511
Commonwealth	Ingots, ore, etc.	‡	‡	5,002	11,291	12,966	13,439	12,814	10,994
VALUE.									
		£	£	£	£	£	£	£	£
New South Wales...	Ingots	531,303	124,320	76,080	163,595	205,373	229,607	126,292	127,089
	Ore	37,492	9,643	464	62,515	80,371	63,698	79,155	83,940
Victoria	Ore	7,334	5,092	4,181	11,159	11,644	10,531	6,070	7,067
Queensland ...	Ore	193,699	116,387	93,723	297,454	490,283	496,766	341,566	244,927
South Australia ...	Ore	...	1,938	5,586	23,768	36,907	41,365	35,876	32,741
West Australia	Black tin	...	10,200	40,000	86,840	157,644	166,139	83,595	65,959
Tasmania	Ore	375,775	293,170	212,542	362,670	557,266	501,681	421,580	418,165
Commonwealth ...		1,145,603	560,750	432,576	1,008,001	1,509,488	1,509,787	1,094,134	979,888

* Dressed tin ore, about 70% tin. † Tin ingot and ore. ‡ Not available.

2. **History.**—(i.) *New South Wales.* The probable occurrence of tin in New South Wales was first referred to by the Rev. W. B. Clarke as early as 1849, while the same author notes having obtained a specimen in the Kosciusko district in 1851 and in the New England district in 1853. He also reported the discovery of stanniferous deposits at different localities in the Darling Downs, Queensland. In 1872 the Messrs. Fearby discovered tinstone near Inverell, and the present Elsmore mine was opened near the spot. The news of the discovery of tin in the New England district attracted a mild rush, and in March, 1872, valuable deposits of stream tin were found at Vegetable Creek. It is interesting to note that native tin, which is extremely rare, was discovered at Oban, in this district. At Cope's Creek stanniferous gravels occur in the channel of the stream and in the slopes adjacent to it. Post-tertiary deposits of tin-bearing ore have been found at Emmaville, where mining was commenced soon after the opening of the district. In the southern portion of the State deposits have been discovered at Dora Dora, near Albury, and Pulletop, near Wagga, in the central-western district at Burra Burra, near Parkes, and in the far west at Poolamacca and Euriowie. The bulk of the yield, however, still comes from the Tingha-Inverell district, the production last year being £127,935, out of a total for the whole State of £211,029. Of the total production in 1909, £146,842, or 70 per cent., represents the value obtained by dredging. In the yield from the Emmaville division an encouraging increase is shewn owing to the augmented returns from the dredges. The yield for 1909 is estimated at 675 tons, valued at £56,700, as compared with 547 tons, valued at £43,800, in the previous year. During the year the Sydney Smelting Company at Woolwich produced 1648 tons of tin, valued at £219,663, but included in this is the product of ores imported from other States.

(ii.) *Victoria.* In Victoria lode tin has been discovered at Mt. Wills, Beechworth, Eldorado, Chiltern, Stanley, and other places in the north-eastern district; and stream tin has been found in a large number of places, including those just mentioned in the north-eastern district. The bulk of the production last year was obtained by dredging and hydraulic sluicing at Toora and Beechworth.

(iii.) *Queensland.* The first notable discovery of the metal in Queensland occurred in 1872, when rich deposits of stream tin were found in the country to the south of Warwick and on the borders of New South Wales. This district proved to be surprisingly rich, the value of the metal raised there during the five years subsequent to its discovery being £715,000. The alluvial deposits, however, soon became exhausted, so far as ordinary mining is concerned, but some degree of success has attended dredging operations in the district. In 1879 important discoveries were made in the Herbert River district, and the rich Herberton, Walsh, and Tinaroo mineral fields were opened up, further discoveries being shortly after reported on the Russell, Mulgrave, Jordan, and Johnstone. At the Annan River tinfield, near Cooktown, alluvial mining has been carried on continuously since 1886. The production in 1909 amounted to 3326 tons, valued at £244,927, more than half of which was produced at the Herberton mineral field.

(iv.) *Northern Territory.* Valuable lodes of tin are found in the Northern Territory at Mount Wells, West Arm and Bynoe Harbour, and at Horseshoe Creek, south of Pine Creek, but the deposits have not yet been exploited to the extent they deserve. In 1909 there were 355 miners engaged in tin mining in the Northern Territory and the quantity of tin ores and concentrates exported was 427 tons. This production was largely due to the progress at the Mount Wells mine, where, it is stated, there are enormous bodies of payable material awaiting development.

The metal has also been discovered near Earea Dam in the province proper.

(v.) *Western Australia.* Tin was first discovered in Western Australia in the year 1888, and since that date has been found in several widely distant localities in the State —at the head of the Bow and Lennard Rivers, in the Kimberley district; on the Thomas River, Gascoyne goldfield; at Brockman's Soak and the Western Shaw, in the Pilbara district; and at Greenbushes, in the south-western portion of the State. The production of tin ore and ingot for the State during 1909 amounted to 698 tons, valued at £65,959, to which the Greenbushes field contributed 459 tons, valued at £34,786. The Pilbara

Goldfield (Marble Bar district) was the only other large contributor. Lode tin has been discovered at Wodgina, in the Pilbara field, and the deposits are being developed.

(vi.) *Tasmania.* Tin mining in Tasmania dates from the year 1871, when the celebrated Mount Bischoff mine was discovered by Mr. James Smith. This mine, which is probably the richest in existence, is worked as an open quarry, and a large proportion of the original hill has been removed in the course of developmental operations. Soon after 1871 deposits were located in the north-east district by Mr. G. B. Bell, while deposits of stream tin were discovered near St. Helens by Messrs. Wintle and Hunt. Further finds were reported from Flinders and Cape Barren Islands, and in 1875 the metal was discovered at Mount Heemskirk. The total production of Tasmania in 1909 was 4511 tons of ore, valued at £418,165, the largest producer being the Briseis Tin Mines Limited, in the North-east division, with a return of 966 tons. The Mount Bischoff mine paid dividends amounting to £36,000, making a total to the end of 1909 of £2,196,000.

3. **World's Production of Tin.**—According to "The Mineral Industry" the world's supplies of tin during each of the last five years were obtained as follows:—

THE WORLD' TIN SUPPLIES, 1905 to 1909.

Origin.	1905.	1906.	1907.	1908.	1909.
	Tons.	Tons.	Tons.	Tons.	Tons.
English production	4,468	4,522	4,407	5,052	5,200
Chinese exports	4,463	3,948	3,480	4,558	4,200
Straits to Europe and America ...	56,840	57,143	53,520	60,491	58,521
Straits to India and China	1,484	1,292	2,178	2,187	2,030
Australia to Europe and America ...	5,028	6,482	6,612	5,748	5,384
Banka sales in Holland	9,960	9,286	11,264	11,530	11,973
Billiton sales in Java and Holland ...	2,715	1,968	2,229	2,235	2,241
Bolivian arrivals in Europe	14,245	16,394	15,594	17,032	18,121
Total (long tons)	99,203	101,035	99,284	108,833	107,670

The main users of tin are the manufacturers of tin-plates, while it is also required in conjunction with other metals to produce bronze, brass, Britannia metal, pewter, printers' type, and solder. It is stated that the rising tendency of prices during recent years is due to the fact that production has not been commensurate with the demands for consumption, and also in some measure to the fact that for industrial purposes the metal can be replaced by others to a limited extent only.

4. **Prices of Tin.**—The average price of the metal in the London market for the year 1897 and from 1901 to 1909 was as follows:—

PRICE PER TON OF TIN, 1897 to 1909.

Year.	Price per Ton.	Year.	Price per Ton.
	£ s. d.		£ s. d.
1897	61 8 0	1905	143 1 8
1901	118 12 8	1906	180 12 11
1902	120 14 5	1907	172 12 9
1903	127 6 5	1908	133 2 6
1904	126 14 8	1909	134 15 6

According to "The Mineral Industry" the maximum price obtained for tin during the period 1897-1909 was reached in December, 1906, when the metal was quoted at £195 19s. 9d. per ton.

Recent advices shew that the price of tin has been steadily rising for some time, and it is expected that good values will be maintained sufficiently long to enable a number of new mines in Australia to be properly opened up.

5. **Employment in Tin Mining.**—The number of persons employed in tin mining during each of the years 1901 to 1909 is shewn below:—

PERSONS ENGAGED IN TIN MINING, COMMONWEALTH, 1901 to 1909.

Year.	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tas.	Cwlth.
	No.	No.	No.	No.	No.	No.	No
1901	1,428	...	1,148	...	413	1,065	4,054
1902	1,288	...	1,467	...	249	1,260	4,264
1903	2,502	...	1,598	...	294	1,331	5,725
1904	2,745	50	2,237	...	284	1,304	6,620
1905	2,884	50	2,936	...	479	1,351	7,700
1906	3,795	95	2,872	...	890	1,659	9,311
1907	3,173	87	2,582	554	1,003	1,828	9,227
1908	2,456	53	2,140	384	614	1,588	7,235
1909	2,037	48	2,158	355	406	1,576	6,580

§ 7. Zinc.

1. **Production of Zinc.**—The production of spelter is practically confined to the Broken Hill district of New South Wales, where zinc blende forms one of the chief constituents in the enormous deposits of sulphide ores.

Gratifying results have been achieved in the work of the profitable extraction of the zinc contents of the large heaps of accumulated tailings on the Broken Hill field. The year 1909 witnessed the passing of this problem out of the experimental stage, and the practical solution of the difficulty which has confronted the mining companies for many years. In 1899 the exports of zinc amounted to 49,879 tons; in 1909 they totalled 373,906 tons, valued at £1,041,280. The plants on the field are being augmented, and under favourable market conditions, there should be a greatly enhanced production of zinc concentrates during the year 1910. The Broken Hill mines have long ranked among the world's cheap producers of lead, and they now promise to occupy a very important position among the contributors to the supply of spelter. The following table shews the production of zinc in New South Wales from 1889 to 1909.

NEW SOUTH WALES.—PRODUCTION OF ZINC, 1889 to 1909.

Year.	Quantity of Zinc (Spelter and Concentrates) Produced.	Value.	Year.	Quantity of Zinc (Spelter and Concentrates) Produced.	Value.
	Tons.	£		Tons.	£
1889	97	988	1907	237,219	536,620
1891	219	2,622	1908	276,720	600,883
1899	49,879	49,207	1909	373,906	1,041,280

The total quantity of zinc (spelter and concentrates) produced in New South Wales to the end of the year 1909 was 1,314,194 tons, valued at £3,069,057. The average price of spelter per ton in the London market during each of the last four years was £27 1s. 5d. in 1906, £23 16s. 9d. in 1907, £20 3s. 5½d. in 1908, and £22 3s. 8d. in 1909.

During the year 1909, 19 tons of zinc, valued at £244, were raised in Western Australia.

§ 8. Iron.

1. **General.**—The fact that iron-ore is widely distributed throughout the Commonwealth has long been known, and extensive deposits have been discovered from time to time at various places in New South Wales, Queensland, South Australia, Western Australia, and Tasmania. It will appear, however, from what is stated below that until quite recently little has been done in the way of converting these deposits into a marketable commodity.

(i.) *The Manufactures Encouragement Act 1908.* It is hoped that the passing by the Commonwealth Parliament of the Manufactures Encouragement Act, which came into force on the 1st January, 1909, will assist in firmly establishing the iron industry in Australia on a remunerative basis, both in the smelting of pig iron and in the production of bar iron and steel from Australian ore. Judging by the increased activity and output already manifested at the iron works at Lithgow, in New South Wales, it would appear that there are reasonable prospects of these hopes being realised in the near future. The Act referred to provides for the payment of a bounty up to the 30th June, 1914, of a total of £150,000 (not exceeding £30,000 per annum) on all pig iron, puddled bar iron and steel, made from Australian ore and pig iron respectively, and for the payment of bounties up to the 30th June, 1912, to a total of £30,000, on galvanised sheet or plate iron or steel, on wire and wire netting, and on iron or steel tubes or pipes, on the following basis :—

BOUNTIES PAYABLE ON AUSTRALIAN PIG IRON, BAR IRON, STEEL, etc.

Description of Goods.	Rate of Bounty.	Total Amount which may be authorised.	Date of Expiry of Bounty.
CLASS 1.			
Pig iron made from Australian ore	12s. per ton	£150,000	30th June, 1914
Puddled bar iron made from Australian pig iron	,,		
Steel made from Australian pig iron	,,		
CLASS 2.			
Galvanised sheet or plate iron or steel (whether corrugated or not) made from Australian ore	10 per cent. on value	£30,000	30th June, 1912
Wire netting, not being prison made and being made from Australian ore or from wire manufactured in the United Kingdom	10 per cent. on value		
Wire made from Australian ore			
Iron and steel tubes or pipes (except riveted or cast), not more than six inches internal diameter, made from Australian pig iron or steel	10 per cent. on value		

Particulars of the bounties paid under the above Act during the half-year ended the 30th June, 1909, and during the financial year 1909-10, are shewn in the following statement:—

PARTICULARS OF BOUNTIES PAID ON AUSTRALIAN PIG IRON, BAR IRON, STEEL, etc., 1909 and 1910.

Description of Goods.	Steel made from Australian Pig Iron.	Puddled Bar Iron made from Australian Pig Iron.	Pig Iron made from Australian Ore.	Galvanised Sheet Iron (plain) made from Australian Ore.	Galvanised Sheet Iron (corrugated) made from Australian Ore.	Wire netting made from wire manufactured in the United Kingdom.	Total.
	£	£	£	£	£	£	£
Half-year ended 30th June, 1909 ...	575	568	2,314	7	184	...	3,648
1909-10	1,491	1,254	23,511	10	276	6,036	32,578
Total	2,066	1,822	25,825	17	460	6,036	36,226

2. **History.**—(i.) *New South Wales.* The existence of large deposits of iron ore in New South Wales has been known since the early years of the history of the State, but until quite recently little was accomplished in the way of utilising these deposits so as to produce any extensive supply of marketable metal. According to a report furnished by the Government Geologist in 1905, the total quantity of ore available for exploitation is 53,000,000 tons, the deposits at Cadia, near Orange, being computed to contain no less than 39,000,000 tons, of which a large proportion consists of ores capable of yielding a high-grade metal. The aluminous ores at Wingello are estimated to contain 3,000,000 tons, the titaniferous magnetic ores on the Williams and Karuah Rivers nearly 2,000,000 tons, the hematite and brown ores at Carcoar, 3,000,000 tons; while several other districts are capable of supplying over 1,000,000 tons. There are extensive supplies of coal and limestone within reasonable distance of some of the more extensive deposits. The increasing demand for iron and steel manufactures, and the enhanced price of the metal, will probably enable the State in the near future to take its place amongst the iron-producing countries of the world. Ironworks were established at Fitzroy, near Mittagong, as far back as 1852, and at Eskbank, near Lithgow, in 1875, but the production of pig iron and manufactures was in neither case considerable. In May, 1907, however, works on a much larger scale were opened at Lithgow, and in January, 1908, they were taken over by the firm of G. and C. Hoskins (Limited). Work was interrupted for some weeks in 1908 owing to a dispute with the men respecting wages, and during this period the opportunity was taken to make considerable additions and alterations to the plant, rolling mills, etc., with the object of increasing the output. The ironstone used in this establishment was obtained at Carcoar, where the deposit is calculated to yield 2000 tons of ore for a period of twenty-five years. During 1909 the ore raised amounted to 46,740 tons. The following materials were also received at the blast furnace:—Limestone, 21,649 tons; and coke, 34,785 tons. The output was 26,762 tons of pig iron, valued at £100,357. In addition the iron and steel, bars, castings, etc., made from scrap, were valued at £6000, while 4958 tons of steel ingots were also manufactured. The following table shews the quantity and value of finished iron, pig iron, etc., made in New South Wales during the last six years, chiefly from scrap iron, but partly from the smelting of iron ore:—

NEW SOUTH WALES—PRODUCTION OF IRON, 1904 to 1909.

Particulars.		1904.	1905.	1906.	1907.*	1908.†	1909 ‡
Quantity ...	Tons	6,803	4,447	8,000	29,902	40,207	29,762
Value	£	80,504	85,693	112,848	178,632	118,224	106,357

* Includes 18,631 tons pig iron, valued at £60,550, produced from 34,500 tons of iron ore raised within the State. † Includes 30,393 tons pig iron, valued at £98,777, from 51,206 tons of ore raised within the State. ‡ Includes 26,762 tons pig iron, valued at £100,357, from 46,740 tons of iron ore raised within the State.

A quantity of iron oxide is purchased by the various gasworks for use in purifying gas, the output in New South Wales being drawn from the deposits at Port Macquarie and Mittagong. During 1909 the quantity raised was 4900 tons, valued at £4958, while the total output to the end of that year was 17,002 tons, valued at £22,893. The quantity of ironstone disposed of for flux in New South Wales during 1909 exhibits a decrease, since the requirements of the smelting companies were diminished. In 1909 the quantity raised was 4339 tons, valued at £3471, as against 8087 tons, valued at £6199, in the preceding year.

(ii.) *Victoria.* Iron ore has been located at various places in Victoria, particularly at Nowa Nowa, in the Gippsland district, and at Dookie. In his report for 1905 the Secretary for Mines states that without special assistance to the industry there does not seem to be any prospect of the deposits being cheaply worked.

(iii.) *Queensland.* Queensland possesses some extensive deposits of iron ore, which is mined chiefly for fluxing purposes in connection with the reduction of gold and copper ores. During the year 1909, 48,636 tons of ironstone were raised, 47,185 tons of which were procured at Iron Island in the Rockhampton district, to be used as fluxes at the Mount Morgan mine.

(iv.) *South Australia.* In South Australia iron ore is raised for fluxing purposes only, although the State possesses some rich deposits capable of being mined for an indefinite period. The best known deposit is the Iron Knob, a veritable hill of iron of high percentage, situated about forty miles W.S.W. from Port Augusta. This property has been leased by the Broken Hill Proprietary Company, the ore being transported to the smelting works at Port Pirie. Extensive beds of limonite with a little hematite are found at Cutana, near Mingary, and it was from this district that the Broken Hill Company at one time obtained ore for fluxing purposes. At Mount Jagged, where a small quantity of pig iron was made about thirty-five years ago, there are large deposits of hematite. Ore beds of varying extent have been located at Peralilla, near Port Victor, at Oodla Wirra, at Donnelly's, near Quorn, and several other localities.

The estimated quantity of iron ore in sight at the Iron Knob and Iron Monarch has been set down at 21,000,000 tons.

(v.) *Western Australia.* This State has some very rich deposits of iron ore, but owing to their geographical position the most extensive fields at the present time are practically unexploited, the production in the State being confined chiefly to that needed for fluxing purposes. The Murchison field possesses some extensive deposits of high-grade ore. It is proposed to work the deposits on Koolan Island at Yampi Sound with a view to exporting the ore for fluxing purposes in connection with the Mount Morgan gold mines, Queensland.

(vi.) *Tasmania.* The existence of large quantities of iron ore in Tasmania was noted as far back as 1822, when Surveyor-General Evans alluded to the "surprising

abundance of iron within a few miles of Launceston." A company known as the Tasmanian Charcoal Iron Company was formed to work these deposits, and commenced operations in June, 1876. Unfortunately, however, the presence of chromium rendered the pig iron so hard and brittle that the works had to be abandoned. Extensive deposits of specular iron ore are also found in the neighbourhood of the Blythe and Gawler Rivers. The total production of iron ore in 1908 was 3600 tons, valued at £1600, and was all raised by the Tasmanian iron mine at Penguin, but owing to the closing down of that mine in 1909, no iron ore was obtained during that year.

(vii.) *World's Production of Iron 1909.* The quantity of iron produced in Australia is but a very small proportion of the world's production, which in 1909 amounted to 61,217,000 tons (pig iron). The leading position for magnitude of production is held by the United States, which in 1909 produced 26,108,000 tons, compared with Germany's 12,918,000 tons, and Great Britain's 9,819,000 tons. The position of the three countries named is similar to what it has been for several years past.

§ 9. Other Metals.

1. **Aluminium.**—The ores from which aluminium is chiefly made in other countries are widely distributed in great abundance in New South Wales in the form of hydrous silicate of alumina which occurs in all clays. In the form of bauxite or hydrous sesquioxide, it is found at Emmaville, Inverell, and Wingello, its existence being first recognised in the last named locality in 1889. The metal, however, has not been manufactured locally.

2. **Antimony.**—This metal is widely distributed in New South Wales, and has been found native at Lucknow, near Orange. Dyscrasite, a silver antimonide, has been found in masses up to one ton in weight in the Broken Hill lodes. It has also been found at various places in Victoria, chiefly in association with gold. In 1908 the export of antimony metal and ore from New South Wales amounted to £1141, and in 1909 to £711. The total quantity of antimony ore raised in New South Wales up to the end of 1909 was 16,329 tons, valued at £301,409. Comparatively little attention was given to mining for antimony in New South Wales during 1909 owing to the low price ruling. The output was drawn from the Hillgrove field, and was obtained principally in the course of mining for scheelite, with which mineral the antimony was found in association. No ore was despatched in 1909 from the mines in the Kempsey and Copmanhurst Divisions. The production of antimony ore in Victoria during 1909 amounted to 1750 tons, valued at £5000. The ore was raised by a syndicate operating at Costerfield. In Queensland extensive deposits were discovered at Neerdie, in the Wide Bay district, during 1872, also at Wolfram Camp on the Hodgkinson field, on the Palmer River, in the Ravenswood district, and on the Mitchell River in the Herberton district. It is stated that there is a prospect of increased production at the Mitchell River deposits, where an elaborate plant has recently been erected. The low price of antimony throughout the year 1908 to a large extent restrained further developmental work. In Western Australia good lodes of stibnite, carrying gold have been found in the Roeburne district.

3. **Arsenic.**—In the form of arsenopyrite, arsenic is of wide distribution in Victoria, but the deposits are worked to a limited extent only. At Ballarat a small quantity of the oxide is obtained from the flues of roasting furnaces. In New South Wales about two tons of arsenic were obtained in 1909 in connection with the treatment of small test parcels of ores from the Moruya mines by the oxy-hydro process. The same process is being operated at the Mount Conqueror mine at Peel.

4. **Barium.**—A valuable lode of barium sulphate has been discovered near Dalwin, on the North Lyell railway, in Tasmania, and the necessary plant is in course of erection

to develop the deposit. It is stated that the lode is from 2½ to 7 feet wide over a length of over 40 chains.

5. **Bismuth.**—This metal has been found in New South Wales, near Glen Innes, and also in the vicinity of Pambula, its discovery dating from 1877. About 8½ tons of metal and ore, valued at £1624, were exported from New South Wales during 1909; the total quantity exported to the end of that year was 521 tons, valued at £123,523. In Queensland the metal is found in the Hodgkinson and Herberton districts, at Ukalunda in the Ravenswood district, and at Biggenden in the Burnett district. The production in 1909, including wolfram, was valued at £63,667. It is stated that there are prospects of a substantial revival in mining affairs at Biggenden. In South Australia deposits are found at Balhannah, at Mount MacDonald, and at Winnininnie, on the shores of Spencer's Gulf. In Tasmania 3 tons, valued at £980, were raised in 1909 at Middlesex.

6. **Chromium.**—In New South Wales chromium is found at Bowling Alley Point, on the Peel River, and also near Coolac, but the quantity raised at present is insignificant. The total exports to the end of 1909 amounted to 30,663 tons, valued at £101,108. Chrome iron ore is found in Queensland in the Rockhampton district, 260 tons, valued at £190, being raised during the year 1909.

7. **Carnotite.**—A discovery of carnotite ore was made twenty miles from the Olary railway station in South Australia, and steps are being taken to test its value commercially. With this object in view, 30 tons of ore have been sent to Europe for assay.

8. **Cobalt.**—This metal was found at Carcoar in New South Wales in 1888, and subsequently at Bungonia, Port Macquarie, and various other places. The total quantity exported from New South Wales up to the end of 1909 was 875 tons, valued at £8010. Deposits have been noted in South Australia near Bimbourie, and South Blinman; in Western Australia at Norseman and Kanowna; and at various places in Victoria.

9. **Lead.**—This metal was first noted in New South Wales in 1849, when small specimens of native metal were found by the Rev. W. B. Clarke. At present lead mining *per se* is not practised to any extent in the Commonwealth, the supply of the metal being chiefly obtained in conjunction with silver. In New South Wales in addition to the lead contained in silver lead, ore, and concentrates, 15,475 tons of pig lead (including lead-carbonate and lead-chloride produced from the leaching plants at Broken Hill), valued at £186,073, were produced in 1909, as against 14,936 tons, valued at £186,746, in 1908. In Victoria oxides, sulphides, and carbonates of lead are found in the reefs of most of the goldfields. The deposits are not, however, of sufficient extent to repay the cost of working. In Queensland the deposits are worked chiefly for the silver contents of the ore. In 1909 the Lady Jane and Girofla mines at Mungana yielded 4659 tons of lead, valued at £59,768. The total quantity produced in Queensland in that year was 5240 tons, valued at £68,543. At one time South Australia produced a fair amount of lead, £22,303 being raised in 1902, but the production has rapidly decreased, and in 1909, only 7 tons, valued at £70 were obtained.

10. **Mercury.**—In New South Wales mercury was first recorded by the Rev. W. B. Clarke in 1843. Cinnabar has been found in lodes and impregnations at various places, such as Bingara, Clarence River, etc. Up to the present the production of quicksilver has been small, the total being only a little over 1000 lbs. Lodes of cinnabar have been found in Queensland at Kilkivan, and at Black Snake, in the Wide Bay district, about four tons were produced between 1874 and 1891. Small quantities have been found near Willunga in South Australia.

11. **Manganese.**—Ores of this metal occur in considerable quantity in widely separated districts in New South Wales, but the low price of the metal precludes mining to any great extent, and the production to date has been trifling. In Queensland there are extensive deposits at Mount Miller, at Gladstone, and Mount Nansen, near Gympie, the product being utilised chiefly by the Mount Morgan mine. The production from the Mount Miller mine amounted in 1909 to 435 tons of ore, valued at £1491, while that of the Mount Nansen mine was 168 tons, valued at £633. Large deposits of manganese have recently been discovered at Skyring's mine on Eel Creek. Extensive deposits of the ore were mined at Boolcunda in South Australia some years ago, but latterly the production has ceased. Deposits have also been noted at Kangaroo Island, Quorn, Tumby, and various other parts of the State. In Western Australia ores of the metal are found widely scattered, the black oxide being especially plentiful in the Kimberley district. In New Zealand deposits are found in various localities, but little has been done in the way of exploration.

12. **Molybdenum.**—In New South Wales molybdenite (associated with bismuth) is obtained at Kingsgate, near Glen Innes, the export in 1909 being 28 tons, valued at £3249, as compared with 8 tons, valued at £929 in the previous year. The production in Queensland for 1909 was 93 tons, valued at £9272, the bulk of which was contributed by the Hodgkinson field.

13. **Radium.**—It is reported that there have been several definite discoveries in Australia of the occurrence of minerals containing radium. The discovery at Olary, in South Australia, of carnotite, which is an alteration product of pitchblende, the compound from which radium is obtained, has already been referred to. In 1910 pitchblende was identified in portion of the workings at Olary and a specimen, exhibiting a high degree of radio-activity, was obtained. This is the first authentic discovery of the mineral pitchblende in Australia. In another case a monazite from Pilbara, Western Australia, has been shewn to give off radium emanations. This mineral has been called "pilbarite." Yet another specimen of mineral having the composition of a secondary pitchblende has been discovered by a prospector. The exact place where this specimen was found is uncertain, but it is believed that it came from the New England district of New South Wales. It is stated that its radio-activity is very marked, the mineral being 1 per cent. more active than the Bohemian variety, and that it contained only such elements as were readily separated from one another by the methods used to obtain pure uranium and radium from Bohemian pitchblende. Lastly, it is stated that the ores obtained at the Moonta mines, South Australia, contain from one-tenth to one-fifteenth of the amount of radium found in high-grade pitchblende, and that a product having a fairly high degree of radio-activity can be extracted therefrom with comparative ease.

14. **Tungsten.**—Wolfram and scheelite, the principal ores of tungsten, are both mined to a small extent in New South Wales. During 1909 the export of wolfram was 127 tons, valued at £11,249, and of scheelite 193 tons, valued at £14,618. Wolfram was mined chiefly in the Deepwater division, and scheelite at Hillgrove. A mine near Omeo, in Victoria, was developed during 1909, and 275 tons of ore, valued at £1432, were produced during the year. In Queensland it is obtained on the Hodgkinson, Etheridge, Rockhampton, and Herberton fields, at Kangaroo Hills, Star River, and at Mount Windsor, in the Cook district. The production in 1909, including bismuth, was valued at £63,667, contributed chiefly to by the mines on the Hodgkinson and Herberton fields. The Northern Territory of South Australia exported ore to the value of £4105 in 1909, as against £542 in 1908, and £11,450 in 1907. In Western Australia a deposit of wolfram has recently been discovered in the West Kimberley district about 70 miles to the north-east of Derby. Wolfram is mined in Tasmania at Ben Lomond and in the Middlesex district, the production for 1909 being 28 tons, valued at £2494. A rich lode of scheelite has been discovered on King Island in Bass Strait.

15. **Tantalum.**—Tantalite in small quantities has been found in the Greenbushes mineral field of Western Australia for some time past, but recently a lode of fairly extensive proportions was located at the Wodgina tinfield. Up to the end of 1905 the production of this mineral in Western Australia amounted to 73 tons, valued at about £10,000, but early in 1906 it was found that the supply exceeded the demand and production was temporarily stopped; in 1908 a small quantity valued at £400 was exported. About £327 worth was reported as having been raised in the Greenbushes and Pilbara fields during 1909, but none was exported owing to the entire absence of any market. Small quantities of the mineral are also produced in the Northern Territory.

In addition to the metals enumerated above there is a large number of others occurring in greater or less degree, while fresh discoveries are being constantly reported.

(B). NON-METALLIC MINERALS.

§ 10. Coal.

1. **Historical.**—Coal was discovered at a very early period in the history of Australia, the first mention of it dating from August, 1797, when its existence was noted in *New South Wales* by some survivors from the wreck of a vessel, who had walked from the southern portion of Australia up the coast to Sydney. The discovery was shortly afterwards confirmed by Surgeon Bass, who found coal in the cliffs southward of Point Solander, but the locality was at the time looked upon as so inaccessible that no attempt was made to utilise the deposits. During 1909, however, the South Coast district, in which the site of these discoveries occurs, produced over 1,619,675 tons of coal, valued at £485,300. In 1797 coal was also discovered at the mouth of the Hunter (or Coal) River by Lieutenant Shortland, and in this case, the deposits being more easily worked, it was not long before they were utilised, and a township sprang up which is now the port of one of the greatest coalfields in the world. The production for the northern district, of which Newcastle is the port, amounted in 1909 to 4,801,361 tons, valued at £1,990,217. A general strike of coal-miners took place on 8th November, 1909, and with the exception of the collieries in the western district (which resumed work on the 21st December), and one or two small mines in the northern and southern districts, the suspension of coal-getting operations continued until the close of the year. It is estimated that this strike was responsible for a reduction of over a million tons in the output for 1909.

The discovery of coal in *Victoria* dates from the year 1825, when the mineral is reported to have been found at Cape Patterson. There is no record of production in the earlier years, but it is stated that the first Victorian coal placed on the Melbourne market came from Kilcunda, in the vicinity of the original discovery. Up to 1889, with the exception of a little work by the companies at Moe and Narracan, the industry languished, the total production to the beginning of the year named being only about 25,000 tons. Early in 1889 the Government determined to come to the assistance of the industry, and the Coal Creek Company at Korumburra was registered, followed during next year by the Jumbunna Company, and the Outtrim, Howitt, and British Consolidated in 1894. The unfortunate strike of 1903 completely disorganised coal mining in Victoria, and the industry still suffers from its disastrous effects. In 1908 an extensive field of coal was discovered, through boring operations, in the Powlett River district. A seam of good, clean, hard coal, so far as proved, extends over an area of 3 miles by 2 miles, and averages 6 feet in thickness. The coal industry in Victoria received a great impetus from this discovery, and from the fact that a strike by the employees took place in the mines of New South Wales. During 1909, 128,673 tons of coal were raised, an increase of 14,711 tons on the previous year. A State coal mine was established at Powlett River towards the end of 1909, and within four months from the commencement of clearing the ground for mining operations, 20,000 tons of coal had been won from the mine. A railway, 27 miles in length, has been constructed from Nyora to the

coal-field. Five hundred and sixty-four acres of freehold land have been purchased by the Government for township and mining purposes, and arrangements are being made for the installation of an adequate water supply, and the erection of an electric-power station and brickworks, etc. It is estimated that by the end of 1910, an output of 2000 tons of coal per day will be maintained and that a population of several thousands will be settled in the locality. Other payable seams in this district outcrop about five miles away, near Cape Patterson, and it is believed that the coal-bearing area has an extent of from twelve to fifteen square miles.

The existence of coal in *Queensland* was known soon after the establishment of the first settlement at Moreton Bay, mines near Ipswich, on the banks of the Bremer Creek and Brisbane River, having been worked almost continuously since. Seams in the Wide Bay district have been operated on since 1870, while good coal was mined at Clermont shortly after the establishment of the copper mines in that locality. A seam of good coal has also been discovered at Mount Mulligan, 32 miles from Dimbulah Station, on the Chillagoe railway. A seam of coal has recently been discovered in the vicinity of the Cooktown district, and plans for boring have been projected. The number of collieries contributing to the output in 1909 was 34, and the quantity of coal raised was 756,577 tons, valued at £270,726, as against 696,332 tons, valued at £244,922 for the preceding year. The industry is at present in a very satisfactory position in the northern State, and owing to the wide area over which the deposits stretch, practically no limit can be set to its possibilities of extension.

In *South Australia* brown coal of fair quality was found in 1889 at Kuntha Hill, 110 miles north of Hergott, and at Leigh Creek, on the Great Northern railway line. The discovery of coal in *Western Australia* dates from 1846, when the mineral was found on the Murray River. Since that year coal has been met with in other localities, but production at the present time is confined to the deposits at the Collie River. Six collieries were in operation on this field during 1909, and the output for the year, viz., 214,302 tons, was the highest ever recorded in the State. In *Tasmania* coal was discovered between the Don and Mersey Rivers in 1850. The value of the deposits at Fingal was first proved in 1863, two tons of this coal producing nearly 14,000 cubic feet of gas.

2. **Production of Coal.**—The quantity and value of coal produced in each State and in the Commonwealth at various periods since 1881, are shewn in the following table:—

PRODUCTION OF COAL, AUSTRALIA, 1881 to 1909.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Cwlth.
			QUANTITY.				
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1881	1,769,597	...	65,612	...	...	11,163	1,846,372
1891	4,037,929	22,834	271,603	...	...	43,256	4,375,622
1901	5,968,426	209,329	539,472	...	117,836	45,438	6,880,501
1902	5,942,011	225,164	501,531	...	140,884	48,863	6,858,453
1903	6,354,846	69,861	507,801	...	133,427	49,069	7,115,004
1904	6,019,809	121,742	512,015	...	138,550	61,109	6,853,225
1905	6,632,138	155,136	529,326	...	127,364	51,993	7,495,957
1906	7,626,362	160,631	606,772	...	149,755	52,896	8,596,416
1907	8,657,924	138,435	683,272	...	142,373	58,891	9,681,095
1908	9,147,025	113,962	696,332	...	175,248	61,068	10,193,635
1909	7,019,879	128,673	756,577	...	214,302	66,162	8,185,593
			VALUE.				
	£	£	£	£	£	£	£
1881	603,248	...	29,033	...	...	4,465	636,746
1891	1,742,796	19,731	128,198	...	...	17,303	1,908,028
1901	2,178,929	147,228	189,877	...	68,561	18,175	2,602,770
1902	2,206,598	155,850	172,286	...	86,188	19,546	2,640,468
1903	2,319,660	43,645	164,798	...	69,128	19,628	2,616,859
1904	1,994,952	70,208	166,536	...	67,174	24,444	2,323,314
1905	2,003,461	79,060	155,477	...	55,312	20 797	2,314,107
1906	2,337,227	80,283	173,282	...	57,998	21,158	2,669,948
1907	2,922,419	79,706	222,135	...	55,158	23,556	3,302,974
1908	3,353,093	64,778	244,922	...	75,694	24,427	3,762,914
1909	2,618,596	76,945	270,726	...	90,965	26,464	3,083,696

In New South Wales there was a decrease in the output for 1909, as compared with the previous year, in each of the three coal-producing districts owing to the strike which took place during that year. (See page 525 hereinafter).

In Queensland nearly the whole of the increase in 1909 is accounted for by the larger output in the Ipswich and Darling Downs districts, which produced over 51,000 tons of coal more than in 1908.

3. **Distribution and Quantity of Coal in each State.**—(i.) *New South Wales.* Estimates have from time to time been made as to the total quantity of coal available for working in the deposits in New South Wales, and while these naturally differ to some extent, they agree in placing the amount at well over a thousand million tons, without taking into consideration the deposits existing below a depth of 4000 feet. According to Mr. E. F. Pittman, the coal-bearing rocks of New South Wales may be classified as follows :—

COAL-BEARING ROCKS OF NEW SOUTH WALES.

Geological Age.	Maximum Thickness of Coal-bearing Strata.	Locality.	Character of Coal.
I. Tertiary—Eocene to Pliocene ...	Approx. 100 ft.	Kiandra, Gulgong, and Chouta Bay	Brown coal or lignite.
II. Mesozoic—Triassic	2,500 ,,	Clarence and Richmond Rivers	Coal suitable for local use only.
III. Palæozoic—Permo-Carboniferous	13,000 ,,	Northern, Southern and Western Coalfields	Good coal, suitable for gas, household and steaming.
IV. Palæozoic—Carboniferous ...	10,000 ,,	Stroud	Very inferior.

No serious attempt has been made to use the deposits of brown coal or lignite as a source of fuel. The Triassic deposits in the Clarence and Richmond districts contain numerous seams, but the coal is largely intersected by bands, while its large percentage of ash renders it unfit for use as fuel for industrial purposes. Probably these beds extend under the great western plains, but the presence of artesian water precludes the possibility of their being worked. It is in the Permo-Carboniferous division that the great productive coal seams of the State are found, the area which they cover being estimated at about 25,000 square miles. The coal from the various districts embraced in this division differs considerably in quality—that from the Newcastle district being especially suitable for gas-making and household purposes, while the product of the Southern (Illawarra) and Western (Lithgow) is an excellent steaming coal. The Permo-Carboniferous measures have in various places been disturbed by intrusions of volcanic rocks, which in some instances have completely cindered the seams in close proximity to the intrusive masses, while in other instances the coal has been turned into a natural coke, some of which has realised good prices as fuel.

In 1909 there was a considerable decrease in production, due to a combination of causes, but principally to industrial troubles and lack of trade. A general strike of coal-miners began on the 8th November, 1909; it is estimated that the strike accounted for a reduction of a million tons in the output, as most of the collieries were closed during the remainder of the year. The quantity and value of the coal raised in each district during the years 1887, 1901, 1908, and 1909 will be seen in the following table :—

COAL RAISED IN NEW SOUTH WALES, 1887 to 1909.

District.	1887.		1901.		1908.		1909.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Tons.	£	Tons.	£	Tons.	£	Tons.	£
Northern ...	2,243,792	1,096,720	3,999,252	1,669,519	6,511,002	2,625,446	4,801,361	1,990,217
Southern ...	376,568	170,684	1,544,454	407,196	1,929,236	570,022	1,619,675	485,300
Western ...	302,137	79,036	424,720	102,214	706,787	157,625	598,843	143,079
Total ...	2,922,497	1,346,440	5,968,426	2,178,929	9,147,025	3,353,093	7,019,879	2,618,596

So far back as 1847 the Rev. W. B. Clarke expressed the belief that workable coal would be found in the strata below Sydney, a belief that was also held by subsequent geologists, who based their contentions on stratigraphical and palæontological evidence. The later geologists urged that the Illawarra coal measures of the South Coast district were identical with the Newcastle measures of the Northern district, although it was agreed that the deposits in the neighbourhood of Sydney would probably be found at a considerable depth. Borings were made in several localities close to Sydney, and in 1891 a drill put down at Cremorne Point in Sydney Harbour passed through a seam of coal seven feet four inches thick and at a depth of 2801 feet. Unfortunately the site of the bore happened to be in the vicinity of a volcanic dyke, which had cindered the coal near the locality of its intrusion. A second bore was commenced in July, 1892, and in November, 1893, a seam of excellent coal, ten feet three inches thick, was reached at 2917 feet. The results attained led to the formation of a company which acquired land at Balmain, and expended a considerable sum of money in the purchase of plant suitable for working coal at such a great depth. Sinking operations were commenced in June, 1897, and coal was struck at a depth of 2880 feet on the 21st November, 1901. Up to the present developmental work has not sufficiently advanced to permit of any considerable production.

(ii.) *Victoria.* The deposits of black coal in Victoria occur in the Jurassic system, the workable seams, of a thickness ranging from two feet three inches to six feet, being all in the Southern Gippsland district. The coal is of excellent quality for steaming and household purposes. The full exploitation of the Victorian coal deposits has, however, been rather severely hindered by various obstacles. In the Report of the Royal Commission on the Coal Industry, 1906, these have been summarised as follows:—(*a*) Labour troubles. (*b*) Difficulties of working arising from faults, displacements, and thin seams. (*c*) Increased cost of production as the workings extend. (*d*) The low price ruling for coal.

Deposits of brown coal and lignite of immense extent occur in gravels, sands, and clays of the Cainozoic period throughout Gippsland, Mornington Peninsula, Werribee Plains, Gellibrand, and Barwon and Moorabool basins. In the Latrobe Valley the beds reach a thickness of over 800 feet. When dried, the material makes good fuel, but owing to its excessive combustibility and friability requires to be consumed in specially constructed grates. Attempts have been made to manufacture briquettes from the brown coal, but so far without any great measure of success. It is stated that a company has recently been formed to instal a modern plant at Morwell for the manufacture of briquettes and the recovery of the by-products. Reference has already been made to the establishment of a State coal mine in the Powlett River district. (See page 522 *ante*.)

The output of coal from the chief Victorian collieries during the last eight years was as follows:—

PRODUCTION OF COAL IN VICTORIA, 1902 to 1909.

Year.	Outtrim Howitt Company.	Jumbunna Coal Company.	Coal Creek Proprietary.	Silkstone Co-operative Company.	Other Companies.	Total Production	Value.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	£
1902	114,686	67,876	39,257	2,257	1,088	225,164	155,850
1903	20,602	18,517	20,727	4,354	5,661	69,861	43,645
1904	57,328	39,364	22,547	2,014	489	121,742	70,208
1905	71,989	49,009	27,710	1,624	4,804	155,136	79,060
1906	74,812	64,222	13,214	3,977	4,406	160,631	80,283
1907	64,083	61,755	3,762	7,565	1,470	138,635	79,706
1908	47,633	58,552	...	6,967	810	113,962	64,778
1909	44,156	65,945	3,265	...	15,307	128,673	76,945

The figures for 1909 include 500 tons of brown coal, valued at £75, which was obtained at Morwell.

The coal from Leigh's Creek in South Australia is subject to similar disabilities to the Victorian brown coal, and until some means are devised of overcoming these, production will probably languish.

(iii.) *Queensland.* In Queensland the coal-bearing strata are of vast extent and wide distribution, being noted under the greater portion of the South-eastern districts, within 200 miles of the sea, as far north as Cooktown, and under portions of the far western interior. The Ipswich beds are estimated to occupy about 12,000 square miles of country, while the Burrum fields occupy a considerably larger area. At Callide, fifty miles west of Gladstone, a seam of coal free from bands has been struck in a shaft only sixty feet deep, and borings have proved the deposit to be of considerable magnitude. The beds in the Cook district are estimated to comprise rather more than 1000 square miles, but coal measures extend to the south-west far beyond Laura and to the north of the railway. Extensive beds occur in the basin of the Fitzroy River, in the Broadsound district, and at the Bowen River. Amongst other places where the mineral is found may be enumerated Clermont, the Palmer River, Tambo, Winton, Mount Mulligan, and the Flinders River. A bituminous coal is yielded by the Ipswich seams, those of the Darling Downs yield a cannel, while anthracite of good quality is furnished by the Dawson River beds.

The quantity and value of coal raised in Queensland at various periods since 1861 were as shewn below :—

PRODUCTION OF COAL IN QUEENSLAND, 1861 to 1909.

Year	1861.	1871.	1881.	1891.	1901.	1908.	1909.
Quantity Tons	14,212	17,000	65,612	271,603	539,472	696,332	756,577
Value ... £	9,922	9,407	29,033	128,198	189,877	244,922	270,726

At present coal mining in Queensland is in a very satisfactory position, the increasing volume of the trade being chiefly due to the action of the Government in granting concessions to vessels coaling at local ports.

The distribution of production during the last two years was as follows:—

QUEENSLAND COLLIERIES, 1908 and 1909.

Collieries.	1908.		1909.	
	Tons Raised.	Average Value at Pit's Mouth.	Tons Raised.	Average Value at Pit's Mouth.
		s. d.		s. d.
Ipswich and Darling Downs	591,535	6 6¼	642,864	6 8½
Wide Bay	84,817	9 5¼	92,573	9 7¾
Rockhampton and Central District ...	18,480	11 7¾	21,007	11 6
Other (Brisbane)	1,500	...	133	...
Total	696,332	7 0½	756,577	7 1¾

A considerable proportion of the produce of the Ipswich district is supplied to vessels for bunker coal. The average value of coal was higher in 1909 than in 1908.

(iv.) *Western Australia.* The coal seams in Western Australia belong to the Carboniferous, Mesozoic, and Post-tertiary ages. Most of the coal contains a large proportion of moisture, and belongs partly to the hydrous bituminous and partly to the lignite class. The only coalfield at present worked is at Collie, in the Mesozoic beds of the south-west. The coal produced is bright and clean, but very fragile when free from moisture. The record output in 1909 is consequent on the establishment of a bunkering trade at Bunbury and Fremantle, which has developed very satisfactorily, and also, in a measure, to the coal-miners' strike in New South Wales. The production from this field since 1901 was as follows:—

PRODUCTION OF COAL IN WESTERN AUSTRALIA, 1901 to 1909.

Year	1901.	1903.	1904.	1905	1906.	1907.	1908.	1909.
Quantity Tons	117,836	133,427	138,550	127,364	149,755	142,373	175,248	214,302
Value £	68,561	69,128	67,174	55,312	57,998	55,158	75,694	90,965

(v.) *Tasmania.* In Tasmania coal occurs in the Carboniferous and Mesozoic systems, the product of the former class being, however, far inferior to that of the latter. Carboniferous seams occur at the Don, Tarleton, Latrobe, Port Cygnet, Tippagory Range, St. Mary's, and Adventure Bay, the seam at Port Cygnet having a thickness of two feet and being of fair quality. The Mesozoic coal measures are well developed in the Fingal basin, the Cornwall coal from this locality being excellent for household purposes. The chief production of recent years has been furnished by the Mt. Nicholas and Cornwall mines, the quantity raised by these mines in 1909 being 27,341 and 29,885 tons respectively. The quantity of coal raised during the years 1901 to 1909 in the various districts was as follows:—

PRODUCTION OF COAL IN TASMANIA, 1901 to 1909.

District.	1901.	1903.	1904.	1905.	1906.	1907.	1908.	1909.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
North-western ...	2,952	1,735	2,282	1,261	1,878	1,045	...	1,543
Eastern ...	37,239	43,157	54,567	46,708	46,803	53,214	55,539	57,227
Midland ...	1,536	1,047	940	200	393	624	...	560
South-eastern ...	...	30	200	200	1,483	4,008	5,529	6,832
South-western ...	3,711	3,100	3,120	3,624	2,339			
Total	45,438	49,069	61,109	51,993	52,896	58,891	61,068	66,162

4. **Production of Coal in Various Countries.**—The total known coal production of the world in 1909 amounted to about 1085 million tons (exclusive of brown coal or lignite), towards which the Commonwealth contributed 8 million tons, or less than 1 per cent. The following table shews the production of the British Empire and the chief foreign countries in units of 1000 tons during each year of the period 1901 to 1909:—

COAL PRODUCTION, BRITISH EMPIRE, 1901-9.

Year.	United Kingdom.	British India.	Canada.	Australian C'wealth.	New Zealand.	Transvaal.
	1000 tons.	1000 tons.	1000 tons.	1000 tons.	1000 tons.	1000 tons.
1901	219,047	6,636	5,791	6,881	1,228	712
1902	227,095	7,424	6,667	6,858	1,363	1,420
1903	230,334	7,438	7,107	7,115	1,420	2,012
1904	232,428	8,216	7,370	6,853	1,538	2,151
1905	236,129	8,418	7,739	7,496	1,586	2,327
1906	251,068	9,783	8,717	8,596	1,730	2,583
1907	267,831	11,147	9,385	9,681	1,831	2,574
1908	261,529	12,770	9,720	10,194	1,861	2,690
1909	263,774	12,961	9,296	8,186	1,909	*

COAL PRODUCTION, FOREIGN COUNTRIES, 1901-9.

Year.	Russian Empire.	Sweden.	German Empire.	Belgium.	France.	Spain.	Austria-Hungary.	Japan.	United States.
	1000 tons.	1000 tons.	1000 tons.	1000 tons.	1000 tons.	1000 tons.	1000 tons.	1000 tons.	1000 tons.
1901 ...	16,215	268	106,795	21,856	31,126	2,609	12,895	8,885	261,875
1902 ...	16,156	300	105,747	23,493	28,893	2,679	12,012	9,589	269,277
1903 ...	17,532	315	114,763	23,415	33,668	2,654	12,526	9,979	319,068
1904 ...	19,294	316	118,874	22,395	32,964	2,974	12,813	10,602	314,122
1905 ...	18,368	317	119,350	21,506	34,652	3,152	13,454	11,818	350,821
1906 ...	21,378	292	134,914	23,191	32,920	3,157	14,475	12,845	369,783
1907 ...	25,583	300	140,885	23,324	35,411	3,637	14,881	13,656	428,896
1908 ...	24,355	300	145,298	23,179	36,044	3,823	14,843	14,587	371,288
1909 ...	24,083	250	146,507	23,182	36,654	3,520	*	14,733	390,336

* Not available.

Including New Zealand the production from Australasia takes second place amongst the possessions of the British Empire, British India coming first in order.

5. **Export of Coal.**—The exports of coal from the Commonwealth are practically confined to New South Wales.

The total quantity of coal of Australian production (exclusive of bunker coal) exported from the Commonwealth to other countries in 1909 was 1,580,986 tons, valued at £837,588, of which amount 1,580,564 tons, valued at £837,320, were exported from New South Wales. The quantity of bunker coal taken by oversea vessels was 1,233,277 tons, of which 998,334 tons were taken from New South Wales.

(i.) *New South Wales.* In the following table will be found the quantity and value of the exports at decennial intervals since 1881 and during the last five years. The figures for New South Wales are given on the authority of the Mines Department of that State, and include both bunker coal and coal exported from New South Wales to other States of the Commonwealth:—

EXPORTS OF NEW SOUTH WALES COAL, 1881 to 1909.

Year.	1881.	1891.	1901.	1905.	1906.	1907.	1908.	1909.
Quantity ... 1000 tons	1,030	2,514	3,471	3,718	4,962	5,744	6,099	4,394
Value ... £1000	417	1,307	1,682	1,484	2,081	2,662	3,021	2,234

The principal countries to which coal was exported from New South Wales during the year 1909 were as shewn hereunder. The quantity and value refer strictly to exports, and exclude bunker coal:—

DESTINATION OF NEW SOUTH WALES EXPORTS OF COAL, 1909.

Country.	Quantity.	Value.	Country.	Quantity.	Value.
	Tons.	£		Tons.	£
Victoria	941,247	535,760	New Zealand ...	240,346	119,973
South Australia ...	461,309	248,392	Peru	41,450	22,863
Chile	469,420	258,478	Hawaii... ...	65,815	35,735
Philippine Islands...	224,671	121,668	United States ...	106,777	57,430
Straits Settlements	150,380	78,201	India	68,027	34,151
Western Australia ...	117,145	59,297	Tasmania ...	86,844	40,053

The quantity of bunker coal taken from New South Wales by oversea vessels was about 998,334 tons, valued at £561,071.

The distribution of the total output from New South Wales collieries during the last six years was as follows; the particulars given of amounts exported include coal shipped as bunker coal:—

DISTRIBUTION OF TOTAL OUTPUT OF NEW SOUTH WALES COAL,

1904 to 1909.

Year.	Exports to Australasian Ports.	Exports to other Ports.	Local Consumption.	Total.
	Tons.	Tons.	Tons.	Tons.
1904	1,880,545	1,292,322	2,846,942	6,019,809
1905	2,066,576	1,651,477	2,914,085	6,632,138
1906	2,260,090	2,701,450	2,664,822	7,626,362
1907	2,379,024	3,364,483	2,914,417	8,657,924
1908	2,715,310	3,383,366	3,048,349	9,147,025
1909	2,200,769	2,192,834	2,626,276	7,019,879

6. **Consumption of Coal in Australia.**—An estimate of the consumption of coal in the Commonwealth may be arrived at by adding the imports to the home production, and deducting the exports (including bunker coal taken by oversea vessels). The following table shews the consumption of coal in Australia, computed in the manner specified, for the last five years:—

CONSUMPTION OF COAL IN AUSTRALIA. 1905 to 1909.

Year.	Quantity of Coal Consumed.			
	Home Produce.	Produce of the United Kingdom.	Produce of Other Countries and Colonies.	Total.
	Tons.	Tons.	Tons.	Tons.
1905	5,468,000	...	8,000	5,476,000
1906	5,352,000	1,000	15,000	5,368,000
1907	5,954,000	3,000	12,000	5,969,000
1908	6,087,000	4,000	11,000	6,102,000
1909	5,361,000	2,000	14,000	5,377,000

7. **Price of Coal.**—(i.) *New South Wales.* The price of coal in New South Wales has been subject to considerable fluctuation since the date of first production. Up to the

end of 1857 the average value of the total output was 11s. 10d. per ton. Next year the value had risen to nearly 15s., declining thereafter until in 1871 the price realised was 7s. From 1872 to 1879 there was a rise in value to 12s. Between 1882 and 1891 the price ranged between 8s. and 10s. From 1891 onwards there was a steady decline until 1898, when the average was 5s. 4d. Henceforward prices rose again until 1902, when 7s. 5d. was the average. A decline then set in until 1905, when the price stood at a little over 6s., followed by a rise of one penny in 1906, and a further rise of eightpence in 1907. In 1908 the average was 7s. 4d. and in 1909, 7s. 5½d. per ton. The price of New South Wales coal depends on the district from which it is obtained, the northern (Newcastle) coal always realising a much higher rate than the southern or western product. The average rate in each district during the last five years was as follows:—

PRICE OF COAL IN NEW SOUTH WALES (PER TON), 1905 to 1909.

Year.	Northern District.	Southern District.	Western District.
	s. d.	s. d.	s. d.
1905	6 4.15	5 5.03	5 0.15
1906	6 5.28	5 6.60	4 10.81
1907	7 4.41	5 7.44	4 6.90
1908	8 0.78	5 10.91	4 5.52
1909	8 3.48	5 11.91	4 9.34

(ii.) *Victoria.* In Victoria the average price of coal up to the 31st December, 1890, was 19s. 3d. per ton. In 1895 the price was still as high as 12s. 2d., but in the following five years there was a serious decline, the value in 1900 being quoted at 9s. 7d. per ton. In 1901, however, there was an astonishing rise, the figure being as high as 14s. 7d. Since that year, however, the price again declined, the average for 1905 being 10s. 2d., for 1906, 10s., for 1907, 11s. 6d., for 1908, 11s. 5d., and for 1909, 12s.

(iii.) *Queensland.* The average price of coal at the pit's mouth in Queensland during the period 1900 to 1909 ranged from 5s. 8½d. in 1906 to 7s. 1¾d. in 1909. Prices in the principal coal-producing districts during the last four years were as follows:—

PRICE OF COAL, QUEENSLAND, 1906 to 1909.

District.	Value at Pit's Mouth.			
	1906.	1907.	1908.	1909.
	Per ton.	Per ton.	Per ton.	Per ton.
	s. d.	s. d.	s. d.	s. d.
Ipswich and Darling Downs	5 2½	6 1½	6 6½	6 8½
Wide Bay and Maryborough	8 0¾	8 4	9 5½	9 7¾
Rockhampton and Central ...	11 2½	11 6¾	11 7¾	11 6

(iv.) *Western Australia.* The average price of the Collie (Western Australia) coal up to the end of 1901 was 9s. 4d. per ton, the price in 1901 being 11s. 7d. In 1902 the average stood at 12s. 3d., and from that time the price fell steadily until 1906, when it was 7s. 7½d. per ton. In 1907 the average price was 7s. 8¾d., in 1908, 8s. 7½d., and in 1909, 8s. 5¾d. per ton.

(v.) *Tasmania.* The average price per ton of coal at the pit's mouth in Tasmania was 8s. in 1901. In 1902 it was 8s. 7d., in 1903, 8s. 9d., in 1904 and 1905, 9s. 8d., in 1906, 9s. 9d., and in 1907, 1908, and 1909, 8s.

8. **Price of Coal in other Countries.**—According to a report published by the Board of Trade the average value of coal at the pit's mouth in the five principal coal-producing countries of the world, for the six years ended 1909, was as follows:—

PRICES OF FOREIGN COAL, 1904 to 1909.

Year.	United Kingdom.	Germany.	France.	Belgium.	United States.
	Per ton.	Per ton.	Per ton.	Per ton.	Per ton.
	s. d.	s. d.	s. d.	s. d.	s. d.
1904 ...	7 2½	8 6½	10 10½	10 8	5 10¾
1905 ...	6 11½	8 7¾	10 6¾	10 2¾	5 8
1906 ...	7 3½	8 11	11 2½	12 2¼	5 9½
1907 ...	9 0	9 8¾	12 3	13 8½	5 11½
1908 ...	8 11	10 3½	12 11¾	13 1½	5 11¾
1909 ...	8 0¾	10 2½	*	*	6 0¾

* Not available.

The price of coal at the pit's mouth in the principal British possessions is averaged by the same authority as follows:—

PRICE OF COAL, BRITISH POSSESSIONS, 1904 to 1909.

Year.	British India.	C'wealth of Australia.	New Zealand.	Canada.	Transvaal.	Cape of Good Hope.	Natal.
	Per ton.	Per ton.	Per ton.	Per ton	Per ton.	Per ton.	Per ton.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
1904	3 5	6 10	10 9	9 3	8 3	20 0	10 8
1905	3 4	6 2	10 7	9 4	7 3	18 8	8 3
1906	3 11	6 3	10 7	9 4	6 5	18 5	8 6
1907	4 8	6 10	10 7	10 8¼	6 0	18 5	9 0
1908	5 3	7 4½	10 4½	10 8	5 10¾	16 8¾	8 10
1909	*	7 6½	*	*	*	*	7 1¼

* Not available.

9. **Employment and Accidents in Coal Mining.**—The number of persons employed in coal mining in each of the States during the year 1909 is shewn below. The table also shews the number of persons killed and injured, with the proportion per 1000 employed, while further columns are added shewing the quantity of coal raised for each person killed and injured, this being a factor which must be reckoned with in any consideration of the degree of risk attending mining operations.

Returns published by the Board of Trade, England, give the total known number of persons engaged in mining and quarrying throughout the world as about 5⅔ millions, more than one-half of whom were employed in coal mining, the number in the United Kingdom being 966,000; the United States, 690,000; Germany, 591,000; France, 191,000; Belgium, 145,000; Austria, 72,000; and India, 129,000.

Recent returns shew the death rate in the United Kingdom in respect of deaths through accidents in coal mines as 1.31, and for the British Empire 1.33 per 1000 persons employed in coal mines. For France the rate is given as 1.10, for Germany 2.55, and the United States 4.66. For foreign countries generally the rate is stated at 3.04 per 1000.

EMPLOYMENT AND ACCIDENTS IN COAL MINING, 1909.

State.	Persons Employed in Coal Mining.	No. of Persons.		Proportion per 1000 Employed.		Tons of Coal Raised for Each Person.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
New South Wales ...	18,168	14	59	0.77	3.25	501,420	118,981
Victoria	607	...	7	...	11.53	...	18,382
Queensland ...	1,715	2	31	1.17	18.08	378,289	24,406
South Australia ...	...	...	...	...	...	...	...
Western Australia ...	394	...	49	...	124.37	...	4,374
Tasmania ...	198	...	1	...	5.05	...	66,162
Commonwealth	21,082	16	147	0.75	6.84	511,599	55,684

§ 11. Coke.

1. **Production of Coke.**—Notwithstanding the large deposits of excellent coal in Australia there is at the present time a fairly considerable amount of coke imported from abroad, the oversea import during the year 1909 amounting to 43,962 tons, valued at £45,061, the bulk of which came from the United Kingdom and Germany, and was taken chiefly by South Australia and Western Australia. Various reasons were at one time adduced to account for the rejection of the local article, such as excessive friability in transport, lack of strength to sustain the weight of large ore bodies in reduction works, excessive amount of ash, etc. These disabilities have, however, been largely overcome, so that succeeding years should see continued expansion in local production. Extensive shipments of coke were obtained from Germany in 1909 for the Wallaroo and Moonta smelters, and for the Broken Hill Proprietary's works at Port Pirie. In explanation of this, it has been stated that while supplies in Australia were not sufficient to meet demands and ensure continuity in supply, there has been considerable over-production at German coke works. In New South Wales the industry has made considerable progress, as the figures hereunder will shew; the lessened production in 1909 is due chiefly to the cessation of work at the Broken Hill Proprietary Company's works at Bellambi for 36 weeks of the year, owing to labour troubles. In addition to this, all the coke works in the Northern district were stopped shortly after the strike of coal miners commenced in the early part of November, and operations were not resumed during the year. The Commonwealth Oil Corporation completed the erection of sixty additional beehive coke ovens at Wolgan, and the same were brought into operation. It is understood that arrangements are in progress to erect ovens of the by-products recovery type near Hexham, in the Newcastle district.

COKE MADE IN NEW SOUTH WALES, 1905 to 1909.

Year.	1905.	1906.	1907.	1908.	1909.
Quantity ... Tons	162,961	186,060	254,609	283,873	204,274
Value, total ... £	100,306	110,607	159,316	199,933	137,194
Value per ton	12s. 4d.	11s. 11d.	12s. 6d.	14s. 1d.	13s. 5d.

A small quantity of coke is made in Queensland, but the bulk of that used in ore reduction is imported, mainly from New South Wales. The following table shews the amount manufactured locally, and the amount imported during the last five years; the quantities imported include shipments landed from other States of the Commonwealth:—

QUEENSLAND—COKE MANUFACTURED LOCALLY AND IMPORTED, 1905 to 1909.

Year.	1905.	1906.	1907.	1908.	1909.
Manufactured locally ... tons	8,650	8,672	8,280	10,684	38,066
Imported ... ... „	9,823	22,661	34,013	58,079	5,588

The development in smelting operations in Queensland is reflected in the increased consumption of coke. It must be understood that the coke referred to above is the production of coke-making establishments only, and does not include the inferior article produced at gasworks.

§ 12. Oil Shale and Mineral Oils.

1. **Production of Shale.**—(i.) *New South Wales.* As pointed out by Mr. E. F. Pittman, the name kerosene shale has been rather inaptly applied to a variety of torbanite, cannel, or boghead mineral found at various geological horizons in New South Wales. The mineral does not, as a rule, split in parallel layers, the fracture being rather of a conchoidal type. Pure samples have been found to contain over 89 per cent. of volatile hydro-carbons and over 5 per cent. of fixed carbons. The discovery of the mineral in New South Wales dates probably from 1827, although the first authentic mention by a scientific observer dates from 1845, when its occurrence in the Hartley Vale district was noted by Count Strzelecki. The mineral has been found at several places in the Upper Coal Measures, and in at least two in the Lower Carboniferous. Production on anything like a large scale commenced in 1868, when about 17,000 tons, valued at £48,000, were raised. The production in 1909 amounted to 48,718 tons, valued at £23,617, as compared with 46,303 tons valued at £26,067 in 1908. With the exception of 209 tons obtained in the Greta Measures, the whole of the output for 1909 was won in the Western District. Up to the end of 1909 the entire production for the State amounted to 1,422,019 tons, valued at £2,217,185.

(ii.) *Victoria.* Up to the present no extensive deposit of oil shale has been located in Victoria.

(iii.) *Queensland.* Deposits of oil shale are known to exist at various localities in Queensland, and what is believed to be a payable oil-bearing area has been located near Roma. In 1907 a contract was let for sinking a bore at this place to search for artesian water, natural gas, or petroleum, to a depth of 4500 feet. In October, 1908, when the bore had reached a depth of 3702 feet, a flow of gas, estimated at over 1,000,000 cubic feet per day, was struck and became ignited accidentally. The fire was extinguished, and after an extra length of casing had been put down the gas was apparently shut off from below. It was then intended to continue the boring till the stipulated depth of 4500 feet was reached but it is understood that this work was temporarily discontinued towards the end of 1910.

(iv.) *South Australia.* In this State large areas of bituminous shale, of which the boundaries are only approximately known, occur at Leigh's Creek and Lake Phillipson. Reference to the mineral known as coorongite is made in sub-section 13.

(v.) *Western Australia.* A deposit of carbonaceous shale of considerable thickness is known to exist at Coolgardie, but the mineral has not yet been raised in any quantity.

(vi.) *Tasmania.* The deposits of oil shale (Tasmanite) in the Mersey district are not at present being worked. The known shale area extends over a strip of country about six miles long and two miles wide, but it is probable that the area in which the shale beds occur is more extensive than is at present known. Two companies have recently commenced operations in the vicinity of the Mersey, and about 14,000 acres of Crown Land have been applied for by investors and speculators. Kerosene shale of fine quality is found in the country between the Jessie and Flowerdale Rivers, but the extent of the beds has not been proved. The seams are in a series of sandstones and clays, approximately 250 feet thick; one of these seams is 20 inches in thickness.

2. **Export of Shale.**—In 1909 New South Wales exported 3920 tons of shale valued at £7970, of which 3352 tons were sent to the United Kingdom, and 542 tons to New Zealand.

3. **Shale Oils Bounties.**—The Shale Oils Bounties Act 1910 provides for the payment of bounties on certain goods manufactured in Australia from Australian shale on or after the 1st July, 1910, and before the 1st July, 1913. The total amount to be made available for bounties under this Act is £50,000. Particulars are given in the following tabular statement:—

COMMONWEALTH SHALE OILS BOUNTIES—AMOUNTS PAYABLE.

Description of Goods.	Rate of Bounty.	Maximum Amounts which may be paid during the Financial Year 1910-11.	Maximum Amounts which may be paid during each of the Financial Years 1911-12 and 1912-13	Date of Expiry of Bounty.
		£	£	
Kerosene*	2d. per gallon.	8,000	16,000	30th June, 1913.
Refined paraffin wax ...	2s. 6d. per cwt.	2,000	4,000	

* The product of shale, having a flashing point of not lower than 73 degrees Fahrenheit, as determined by the "Abel Pensky" test apparatus in manner prescribed.

§ 13. Other Non-Metallic Minerals.

1. **Alunite.**—Probably the most remarkable deposit of alunite in the world occurs at Bulladelah, in the county of Gloucester, New South Wales, a large proportion of a low range of mountains in the district being composed of this mineral. The deposits are worked by quarrying, and up to the end of 1909, 33,468 tons had been exported, valued at £99,208, the exports for the year 1909 being 3500 tons, valued at £8791. This quantity represents the shipment of accumulated stocks, the actual output for the year 1909 from the quarries having been on a restricted scale, owing to their having been closed temporarily on account of the dangerous condition of the workings. It is reported that large deposits of a high-class alunite have been discovered near Sunbury, Victoria.

2. **Asbestos.**—This substance has been found in various parts of Australia, but up to the present has not been produced in any considerable quantity. In New South Wales the deposits at Jones' Creek, in the Gundagai division, were opened up during the year 1909 and a trial parcel of 15 tons shipped to Germany. It is stated that if reports are satisfactory a plant will be erected and mining operations actively carried on. In Western Australia what may prove to be a valuable deposit of the fibrous chrysotile variety has been located at Tambourah, on the West Pilbara goldfield, and in 1909 £154 worth of

this mineral was raised. In 1899 Tasmania raised 200 tons, valued at £363, but there has been no production during the last ten years. Deposits of asbestos of the mountain leather and mountain cork varieties have recently been discovered at Oodlawirra in South Australia.

3. **Clays and Pigments.**—Valuable deposits of clays and pigments of various sorts are found throughout the Commonwealth. There is a considerable local production of earthenware, bricks, and tiles, but the finer clays have not as yet been extensively used. It is stated that kaolin of a high class has been discovered at Dunbible, near Murwillumbah, in New South Wales; during 1909 these deposits were being opened up, and parcels aggregating 30 tons realised £37 10s. From Tichborne, in the Parkes' division, some 50 tons of kaolin were despatched to Sydney for manufacturing purposes, while at Ulladulla about 50 tons of pottery clay were mined. Deposits of soapstone near Wallendbeen are being opened up. In Victoria 493 tons of kaolin of the finest quality, valued at £619, were raised during 1909, mostly at Egerton. There are also deposits of kaolin at Knowsley and Gordons, Victoria. In Queensland 3077 tons of fireclay, valued at £1366, were mined during the year 1909. On Kangaroo Island, South Australia, where, it is stated, the first pottery mill in the Commonwealth was erected, there are vast deposits of felspar, china stone, silica, and firebrick clay. There are also very extensive deposits of fireclay near Ardrossan on the Yorke Peninsula, and it is stated that a syndicate has recently been formed to work these deposits. Two deposits of yellow ochre have been opened up in New South Wales, one near Dubbo and the other at Webb's Creek on the Hawkesbury River. Good samples of umber have also been obtained in New South Wales, and water paints from materials raised in that State have achieved considerable success. A silicate paint has been placed on the market, and successful experiments of a preliminary nature have been carried out with the view of proving how far local materials can be used for the preparation of colours requiring chemical treatment, and siennas, greens, and other colours have been exhibited. Extensive deposits of iron oxide, giving a return of 80 per cent. ochre, have recently been discovered near Oodlawirra in South Australia.

4. **Coorongite.**—This peculiar indiarubber-like material was first noted many years ago near Salt Creek and in the vicinity of Coorong Inlet, in South Australia. It was thought that the substance owed its origin to subterranean oil-bearing strata, but so far the search for petroleum has not been attended with success.

5. **Graphite.**—Graphite is found in New South Wales near Undercliff Station, in the county of Buller, but the deposit is not sufficiently pure to prove remunerative. In Victoria the mineral occurs in Ordovician slates in several of the goldfields, but is not worked. In Queensland the mineral is raised by the Graphite Plumbago Company at Mt. Bopple, near Netherby, on the Maryborough-Gympie line. During the year 1908 this company was engaged in deepening the shaft of their mine, and in the course of these operations raised 20 tons of ore, valued, undressed at the mine, at £3 a ton. In 1907 the quantity produced was 65 tons, valued at £200. There is an extensive deposit of the mineral at Mt. Bopple, but the quality is rather inferior. In Western Australia a company has recently been formed to work deposits near Bunbury.

6. **Gypsum.**—This mineral is found at various places in the Commonwealth. There is a large quarry at Boort, Victoria, while in South Australia deposits are being worked at Lake Fowler and near Marion Bay, Yorke Peninsula.

7. **Tripolite, or Diatomaceous Earth.**—Although tripolite has been found at Barraba, Cooma, Wyrallah, and in the Warrumbungle Mountains in New South Wales, the deposits have not yet been worked commercially. The opening up of the Barraba railway has, however, led to the taking up for mining purposes of a deposit of diato-

maceous earth which has been recently localised. If, as seems likely, the material can be placed on the Sydney market at a reasonable price, a moderate output may be obtained. In Victoria there is a remarkably pure deposit at Lillicur, near Talbot, while beds of the mineral are also met with at Clunes and Portland. From the deposit at Talbot, 800 tons, valued at £2400, were obtained in 1909.

8. **Salt.**—Salt is obtained from salt lakes in the western and north-western districts of Victoria, and from salterns in the neighbourhood of Geelong. Large quantities are also obtained from the shallow salt lakes of South Australia, chiefly on Yorke Peninsula. Lake Hart, about sixty square miles in area, situated about 120 miles N.W. from Port Augusta, contains immense supplies of salt of good quality, which at present, however, owing to distance from market, possess no economic value. The salt is simply scraped from the beds of the lakes in summer time and carted to the refinery. It is stated that care must be taken not to leave too thin a crust of salt over the underlying mud, as the resultant "crop" after the winter rains will in that case be smaller than usual. A bore recently put down near Kingscote, on Kangaroo Island, revealed brine which can be profitably used by evaporation. The production of crude salt in South Australia during 1909 was 51,407 tons, valued at £25,594. In Western Australia supplies are obtained from dried-up shallow lakes and consumed locally or exported. The chief centres of production were formerly Rottnest Island, near Fremantle, and Middle Island, near Esperance, but the greater part of that now produced is obtained at Port Gregory.

9. **Natural Manures.**—In Victoria large quantities of "copi," an impure hydrous sulphate of lime, are obtained in the North-western district. South Australia possesses deposits of rock phosphate near Port Clinton and Ardrossan on Yorke Peninsula, at Belvedere near Kapunda, and at Kooringa, and also at many other places which have only been prospected to a small extent. The production in 1909 was valued at £3697. Although it can hardly be considered a mineral product, mention may be made here of the large accumulations of guano on the Abrolhos Islands, off the coast of Western Australia, in the neighbourhood of Geraldton. The deposits vary in thickness from four to twenty-seven inches. During the years 1876-80 over 36,000 tons were raised; no figures are available shewing the production of recent years.

§ 14. Gems and Gemstones.

1. **Diamonds.**—Diamonds were first noted in New South Wales by E. J. Hargraves in 1851, and in October of the same year by Geological Surveyor Stutchbury. The Cudgegong field was discovered in 1867, and shortly afterwards the Bingara diamantiferous deposits were located. None of the diamonds so far discovered have proved of any considerable size, the largest weighing about 6¼ carats. Stones of small size are also found at Cope's Creek and other places in the Inverell district. It is difficult to obtain accurate returns in connection with the production of precious stones, but the yield of diamonds in 1909 was estimated at 5474 carats, valued at £3959, while the total production to the end of 1909 is given as 167,354 carats, valued at £111,462. The yield in 1909 was contributed by miners working in the vicinity of Copeton, in the Tingha division, and it is estimated that twenty-five men were employed on an average during the year. Small quantities of diamonds are found in Victoria in the gravels of streams running through granite country in the Beechworth district; at Kongbool in the Western District; and near Benalla. The stones are generally small, and the production up to date has been trifling. A few small diamonds have been found in the Pilbara district in Western Australia. In South Australia diamonds have been found on the Echunga goldfield, the most notable gem being Glover's diamond, which was sold for £70.

2. **Sapphires.**—These gems were discovered in New South Wales in 1851, near Burrandong. The gems have also been found in small quantities near Inverell, and at a few other localities in the State. There is no record of production. Specimens of sapphire have been found in Victoria, but the stones of commercial size are generally of little value owing to flaws.

In Queensland sapphires are found in the gravel of creek beds, between Withersfield and Anakie on the Rockhampton-Winton railway line. The gems show excellent fire and lustre, but the colour is darker blue than the Oriental sapphire. Hyacinths are occasionally found in association with the gems. The production of sapphires in Queensland last year was valued at £23,116, and up to the end of 1909 the total was £140,593.

3. **Precious Opal.**—This stone was first discovered in New South Wales at Rocky Bridge Creek on the Abercrombie River, in the year 1877, and later a most important discovery was made at White Cliffs in the Wilcannia district, which is now the centre of production. The value of opal raised last year was estimated at £61,800, of which £21,800 worth was raised in the White Cliffs district, and the balance at the Wallangulla field in the Walgett division. Beautiful specimens of "black" opal, realising over £40 an ounce, have been obtained at the last-mentioned field. Since the year 1890 the total value of opal won is estimated at £1,171,699.

Small quantities of precious opal are also found in the Beechworth district in Victoria. In Queensland, the first recorded discovery of the gem dates from about 1875. The opaliferous district stretches over a considerable area of the western interior of the State, from Kynuna and Opalton as far down as Cunnamulla. The yield in 1909 was estimated at £2000, and up to the end of that year at £163,500. These figures are, however, merely approximations, as large quantities of opal are disposed of privately to buyers on the fields, no record of which is obtained.

4. **Other Gems.**—Emeralds were found in New South Wales in the year 1890, near the township of Emmaville, the largest specimen found in the district weighing twenty-three carats in the rough. Altogether 2225 carats were sent to London during that year, some of the gems bringing £4 a carat, but the production has since dwindled. The mine at The Glen in the Emmaville division was reopened and worked for a short period during 1908, when about 1000 carats of emeralds, valued at about £1650, were obtained. The largest stone in the rough weighed 60 carats. Amongst other gems found in New South Wales at various times may be mentioned *turquoises*, discovered in 1894, near Bodalla; *topazes*, fine specimens of which have been obtained in the New England district, and *zircons* and *garnets*. Turquoises are also found in thin veins in Victoria, but the deposit is not rich enough to pay for expenses of working. Fine *agates* are found in many places in Victoria, but have not been made use of to any extent. Garnets are found in Western Australia, and beautiful specimens of *crocidolite* have been obtained at Yarra Creek in the Murchison district. *Rubies* have been found at various places in New South Wales and Queensland. *Tourmaline* has been found on Kangaroo Island, in South Australia, and *beryls* near Williamstown, Victoria.

(C). GENERAL.

§ 15. Numbers Engaged, Wages Paid, and Accidents in Mining.

1. **Total Employment in Mining.**—The number of persons engaged in the mining industry in each State and in the Commonwealth is an index of the significance of the mineral wealth. During the year 1909 the number so employed was as follows:—

NUMBER OF PERSONS ENGAGED IN MINING, 1909.

State.	Number of Persons Engaged in Mining for						Total.
	Gold.	Silver, Lead, and Zinc.	Copper.	Tin.	Coal and Shale.	Other.	
New South Wales ...	5,585	6,207	2,024	2,037	18,569	1,983	36,405
Victoria	18,671	4	2	48	607	64	19,396
Queensland	7,150	354	3,241	2,158	1,715	589	15,207
South Australia	1,177	40	4,504	355	...	1,052	7,128
Western Australia ...	17,027	5	497	406	394	7	18,336
Tasmania	713	1,516	2,038	1,576	198	13	6,054
Commonwealth ...	50,323	8,126	12,306	6,580	21,483	3,708	102,526

The following table shews the number of persons engaged in mining in the Commonwealth during each of the years 1891, 1901, and 1909, together with the proportion of the total population so engaged:—

PROPORTION OF PERSONS ENGAGED IN MINING, AUSTRALIA, 1891, 1901, 1909.

State.	1891.		1901.		1909.	
	Miners Employed.	No. per 100,000 of Population.	Miners Employed.	No. per 100,000 of Population.	Miners Employed.	No. per 100,000 of Population.
New South Wales ...	30,604	2,700	36,615	2,685	36,405	2,155
Victoria	24,649	2,151	28,670	2,381	19,396	1,510
Queensland	11,627	2,934	13,352	2,664	15,207	2,691
South Australia	2,683	834	7,007	1,931	7,128	1,736
Western Australia ...	1,269	2,496	20,895	11,087	18,336	6,767
Tasmania	3,988	2,695	6,923	4,017	6,054	3,287
Commonwealth ...	74,820	2,341	113,462	2,992	102,526	2,372

2. **Wages Paid in Mining.**—In the next table will be found a statement of the average wages earned by employés in the chief branches of the mining industry in Australia. The value of the figures is rather prejudiced by the wide diversity of conditions, not only in the several States but in different districts of the same State.

The figures quoted for New South Wales in gold mining refer to the Hillgrove district. For copper the figures refer to the Cobar district, and represent rates as awarded by the Arbitration Court. The maximum is paid when copper is £115 per ton or over, and the minimum when the metal is £70 per ton or under, a graduated rate prevailing between the extremes. The rates for silver miners are those ruling at Broken Hill. As regards Queensland the rates for hewing in coal mines are for miners not doing their own wheeling. Where own wheeling is done the rate varies from 2s. 3d. to 5s. 6d. Generally speaking, the classification of the labour in the various States does not permit of very satisfactory comparisons.

WAGES PAID IN MINING INDUSTRY IN THE COMMONWEALTH, 1909-10.

Class of Mine.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.
GOLD—	per day.	per day.	per day.	per day.	per day.	per day.
Labourers ...	6/6 to 7/6	7/-	6/- to 12/-	8/-	9/- to 11/10	7/-
Bracemen ...	7/- to 8/4	7/-	3/6 to 12/-	8/-	9/- to 13/4	7/6
Platmen ...	7/6 to 8/4	7/-	7/- to 13/4	8/-	9/- to 13/4	7/6
Miners	7/- to 10/6	7/6	7/4 to 13/4	9/6	10/- to 13/6	7/6
Wet	8/4	8/4	10/-	11/-	10/10 to 15/2	8/4
Shaft-sinking ...	...	8/4	10/-	11/-	11/8 to 15/-	8/4
Wet	9/- to 10/6	9/2	...	11/-	12/6 to 16/8	9/2
Blacksmiths ...	9/- to 11/-	8/4	6/- to 15/-	9/6	...	8/-
Carpenters ...	9/- to 10/6	8/4	8/- to 13/4	10/6	...	8/-
Engine-drivers—						
Stationary ...	8/4 to 9/-	8/4	9/- to 13/4	10/-	12/- to 15/-	8/-
Winding ...	9/- to 10/-	8/4	10/- to 15/-	10/-	12/- to 16/8	8/4
Battery feeders ...	6/6 to 7/6	6/-	6/8 to 11/4	8/-	9/- to 11/10	8/-
Shift bosses ...	10/- to 12/-	8/4	9/- to 16/8	13/4	16/8	wk. salary
Machine miners	9/- to 10/-	8/4	9/10 to 14/2	11/-	12/4 to 14/4	8/4
Timbermen ...	9/- to 10/-	8/4	8/2 to 15/-	10/-	12/- to 15/-	8/4
SILVER-LEAD—						
Labourers ...	8/7½			8/-		7/6 to 8/6
Bracemen ...	9/6			8/-		8/- to 9/-
Miners	10/-		(Note.—The	9/6		8/4 to 10/-
Blacksmiths ...	10/-		above figures	9/6		9/- to 12/2
Carpenters ...	10/6 to 11/6		refer to aver-	10/6		9/8 to 13/4
Engine-drivers—		Not	ages per shift		Same as	
Winding ...	11/-	mined.	in all metalli-	10/-	gold.	9/4 to 10/-
Shift bosses ...	14/-		ferous mines	13/4		10/- to 13/4
			in Q'nsland)			
Truckers ...	8/7½			8/-		7/6 to 9/-
Timbermen ...	11/-			10/-		8/4 to 10/-
COPPER—						
Labourers ...	8/-		...	8/-		8/6 to 10/6
Miners	9/2		...	9/6		9/6 to 10/6
Blacksmiths ...	10/6		...	9/6		10/6 to 13/-
Carpenters ...	11/-		...	10/6		9/6 to 12/6
Engine-drivers—						
Winding ...	10/6	Not	(see above)	10/-	Do.	11/-
Bracemen ...	8/2	mined.	...	8/-		9 6
Drill sharpeners	9/6 to 12/-		...	10/-		9/6 to 10/6
Timbermen ...	9/2 to 10/-		...	10/-		10/- to 11/6
Machine miners	9/2 to 9/4		...	11/-		9/6 to 10/6
Miners in wet [ground	9/4		...	11/-		12/- for 6 hrs
TIN—		(sluicing)				
Labourers ...	7/6 to 8/-	7/-	...			7/- to 8/6
Miners	8/4 to 9/-	7/-	...			7/6 to 9/-
Blacksmiths ...	9/- to 10/-	10/-	...			9/- to 13/4
Carpenters ...	9/- to 10/-	10/-	...			9/- to 12/-
Engine-drivers—						
Stationary ...	8/4 to 10/-	8/4	...	Not	Do.	9/- to 10/-
Shift bosses ...	10/- to 12/-	10/-	(see above)	mined.		8/- to 10/6
Nozzlemen ...	8/4	8/-	...			8/- to 9/6
Racemen ...	7/6 to 8/4	7/-	...			7/- to 9/6
Face bosses ...	8/4 to 9/-	...	...			9/- to 15/-
Boxmen... ...	8/- to 8/4	7/-	...			...
Sluicemen ...	7/6 to 8/-	8/-	...			8/6 to 9/6
COAL—						
Deputies ...	10/- to 11/4	9/- to 12/-	10/-		14/3	8/- to 8/6
Shot firers ...	10/- to 11/-	...	10/-		13/5	...
Shiftmen ...	7/- to 12/4	7/6 to 10/-	10/- to 11/-		13/5	7/- to 8/-
Wheelers ...	5/- to 9/1	6/- to 8/-	4/- to 10/-		11/7	3/- to 7/-
Overmen ...	£3 to £5/10/wk	9/- to 13/4	13/4		£5 per week.	10/- to 11/8
Miners	10/2 to 13/1½	10/-	10/- to 11/-		13/	8/- to 10/-
Machinemen ...	9/- to 12/5	...	10/-		13/5 to 14/11	...
Enginemen—						
Winding ...	9/6 to 11/4	10/-	10/- to 11/-	Not		8/4 to 11/8
Hauling... ...	6/2 to 10/3	8/4	9/- to 10/-	mined.	12/7	6/- to 10/-
Other	7/10 to 10/2	...	8/6			6/- to 8/-
Labourers ...	6/6 to 8/6	7/6	7/6		10/7	6/- to 7/6
Blacksmiths ...	8/- to 11/11	10/-	6/- to 10/-		12/5	7/- to 8/-
Carpenters ...	7/9 to 11/4	9/- to 11/2	7/9 to 8/4		12/9	6/6 to 8/-
Safety lampmen	3/5 to 10/2	...	...		...	...
Platmen or [banksmen	7/11 to 9/7	7/6 to 9/-	4/6 to 9/-		11/5	6/-

3. **Accidents in Mining, 1909.**—The following table gives particulars of the number of men killed and injured in mining accidents during the year 1909 :—

NUMBERS KILLED AND INJURED IN MINING ACCIDENTS, 1909.

Mining for—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Cwlth.
KILLED.							
Coal and shale ...	14	...	2	...	...	...	16
Copper	4	...	8	1	1	4	18
Gold	4	15	16	...	33	...	68
Silver, lead and zinc...	11	...	2	...	...	2	15
Tin	...	...	2	...	...	...	2
Other minerals ...	1	...	...	...	...	...	1
Total	34	15	30	1	34	6	120
INJURED.							
Coal and shale ...	59	7	31	...	49	1	147
Copper	14	...	34	5	...	10	63
Gold	10	99	59	...	411	*	579
Iron	...	...	...	...	...	*	...
Silver, lead and zinc...	17	...	2	...	...	15	34
Tin	2	...	5	1	1	*	9
Other minerals ...	...	...	5	...	...	23	28
Total	102	106	136	6	461	49	860

* Included in "Other Minerals."

§ 16. State Aid to Mining.

1. **Introduction.**—The development of the mineral resources of the several States is fostered and encouraged by the respective Governments in various ways. It is proposed to deal below only with the more direct and special methods by which assistance is rendered for developmental or other purposes, and not to include herein particulars of certain general developmental works found in nearly all civilised countries, such as geological surveys and schools of mines; there is also, as a general rule in all States, some provision for free assays for prospectors. Particulars as to the total expenditure on mining development in each State from loan funds are given in the Section of this book dealing with the subject of *State Finance* (see Section XX. § 4); it should be noted, however, that in addition considerable sums have been spent in some of the States on Government aid to mining out of the consolidated revenue.

2. **New South Wales.**—Though there is no Act in force in this State specifically relating to the provision of loans in aid of mining development and prospecting, various arrangements have been made for rendering financial assistance to prospectors and others.

(i.) *Prospecting Votes.* Since the year 1887 annual appropriations have been made by Parliament "to promote prospecting for gold or other minerals, and to encourage the opening of new goldfields." The total amount expended under these votes to the 31st

December, 1909, was £404,935. During the year 1909 aid was granted by the Prospecting Board in 202 cases, and refused in 191, while the total amount expended from the vote during the year was £10,642. From the reports which were received by the Mining Department from the various mining divisions throughout the State, it is apparent that comparatively little attention was given to prospecting during the year 1909.

(ii.) *Boring Plants.* No special provision exists in New South Wales for the expenditure of funds on boring for minerals, though on several occasions, as, for instance, where the proving of the occurrence of coal in certain localities was considered to be a question of national importance, diamond drills have been provided from special votes.

(iii.) *Government Batteries.* An amount of £5000 was provided in the year 1907 for the establishment of crushing batteries on gold and mineral fields; as yet no expenditure has been made from this amount, which is still available during the financial year 1910-11.

3. **Victoria.**—State assistance to mining in Victoria is provided for by the Mining Development Acts, 1896 to 1908. The original Act provided for the advances and grants to be made out of the sum of £140,000 raised by the issue of Treasury bonds, but an amending Act of 1898 provided that they should be paid also out of any moneys authorised from time to time. Various Acts have been passed for the appropriation of money, generally out of surplus revenue, for mining development or for special purposes in connection therewith, such as the equipment of Schools of Mines, the purchase of cyanide patents, of a metallurgical laboratory, or of boring machinery. A considerable amount of boring for the purpose of locating mineral deposits is also carried out by the Government.

(i.) *Advances to Miners for Prospecting.* Any two or more persons in combination may apply for an advance not exceeding £250 for the purpose of assisting them to prospect for any minerals or metals, and, subject to the usual evidence as to *bona fides*, undertakings to secure repayment, and proof of previous expenditure of £1 for every £1 granted, the Minister may recommend the granting of the loan.

(ii.) *Advances to Companies for Development of Mining.* Under Part I. of the Act of 1896, a company may apply for a loan for the purpose of (*a*) carrying on pioneer mining, (*b*) procuring and erecting machinery, and (*c*) providing all works necessary for carrying on such pioneer mining. The loans to any one company may not exceed £10,000, and are subject to the same conditions as advances to miners (see (i.) above). Under the amending Act of 1908 a sum of not more than £50,000 is authorised to be advanced by way of loan to companies for development of deep alluvial or of deep quartz mining. Evidence and information must be furnished by an applicant for a loan as to the history of the company, the nature of the land upon which it is intended to carry on mining operations, the machinery and appliances which it is proposed to use, and as to the estimated cost of such machinery; and a statement must be provided shewing the period of time over which the advance is to extend. Applications are referred by the Minister to the Government Geologist for report and are then dealt with by the Executive Council. Interest on loans at the rate of $3\frac{1}{2}$ per cent. per annum must be paid half-yearly, and the payments to the Treasurer form a first charge on the profits and assets, except uncalled capital, of the company.

(iii.) *The Establishment of Plant for Testing Metalliferous Material.* Government testing plants may be established only in districts where there is no battery where ore is crushed or dealt with for payment. If the Minister be of opinion that there is a necessity in the interest of the mining industry for the establishment of a testing plant in any district, he may submit to the Treasurer such evidence as in his opinion is sufficient to justify the expenditure necessary to procure and erect the same, and the Treasurer may recommend the Governor to grant, and the Governor may grant, the necessary funds. The purchase, transport, erection, and removal of any testing plant, and the rates to be charged for its use must be in accordance with regulations made under the Act.

Of the twenty-three batteries which had been erected by the Government up to the end of the year 1909, fourteen have been managed by local committees, without expense to the Mines Department as far as the cost of working is concerned, while the remaining nine were worked directly under the supervision of departmental officers. The quantity of ore crushed during 1909 at the batteries owned by the Government was 3068 tons for a yield of 1566 ozs. of gold, shewing an average of 10 dwts. per ton. The total cost of working and maintenance during the year amounted to £2654, and the sum received from the public for crushing was £949, giving a net cost of £1706. From 1897, when the first battery was erected, to the end of 1909, a total of 33,247 tons, yielding 19,964 ozs., has been treated. A total sum of £22,490 has been spent on the erection of the twenty-three plants; the total received for crushing was £7064, and as the cost of maintenance was £27,030, the net cost amounted to £19,966.

Diamond drills are hired out by the Government under specified conditions to companies at a rental of from £2 to £4 per month according to size and kind of drill, £200 being lodged as security to cover breakages, and hand-boring plants are also hired under similar conditions at a rental of 10s. per month.

(iv.) *Construction of Roads and Tracks for Mining.* Under Part II. of the Act of 1896 the Minister may, subject to certain conditions, on the application of the council of any shire situated in an outlying or mountainous part of Victoria, construct a road suitable for the transport of mining machinery and appliances to any locality where mining is being carried on by more than one company, or by holders of miners' rights.

(v.) *Construction of Races and Dams.* Under Part IV. of the Act of 1896 the Minister is empowered, subject to the report of the Government Geologist and the Chief Engineer of Water Supply, and to the approval of the Treasurer and Governor in Council, to construct races and dams for working alluvial deposits for gold, to divert water for such uses subject to all existing rights, and to make regulations for the payment of rates for the use of the water.

(vi.) *Dissemination of Information.* Part VI. of the Act of 1896 provides that if the Minister be of opinion that it is advantageous to expend money for the purpose of disseminating information in Great Britain and other countries as to the mining resources of Victoria, and for holding in Victoria a public exhibition of mining machinery and appliances, he may recommend the Governor through the Treasurer to grant moneys necessary for the purpose.

(vii.) *Expenditure on Government Aid to Mining.* The following statement shews the total expenditure under the Mining Development and Surplus Revenue Acts up to the end of the year 1909 :—

VICTORIA.—EXPENDITURE ON GOVERNMENT AID TO MINING TO END OF YEAR 1909.

Particulars.		Advances to Mining Companies.	Advances to Prospectors.	Boring for Gold and Coal.	Roads and Tracks.	Erection of Testing Plants.	Miscellaneous.	Total.
Amount	£	124,915	57,364	59,231	69,156	22,490	47,673	380,829

In addition, the expenditure from votes from the 30th June, 1904, to the 30th June, 1909, was £62,393 on boring for gold and coal, and £12,492 on testing plants.

The repayments by companies of the loans advanced amounted on the same date to £17,800, and by parties of miners to £1916. A sum of £5210 has been repaid for part of the cost of boring, and also hire of plant and loss of diamonds. Several companies have discontinued operations, and their security in the way of plant was taken possession of and sold for a total of £10,106. The amount of loans was, however, £28,080, and thus a loss of £17,974 was incurred.

4. **Queensland.**—Special assistance granted to the mining industry in this State may be conveniently dealt with under the headings specified below:—

(i.) *Assistance to Prospectors.* Assistance is granted in connection with sinking wells and providing equipment or rations for small parties of miners, and in some cases for prospecting or developing lodes. Such assistance is granted directly by the Minister, sometimes to a local authority, sometimes through the warden, and sometimes to miners or progress associations.

(ii.) *Grants for Roads and Bridges to Gold and Mineral Fields.* These grants are made either for the purpose of repairing existing roads and bridges or of constructing new ones; they are made with Executive approval, generally to local authorities.

(iii.) *Loans in aid of Deep Sinking.* These loans are made with the approval of the Executive in order to prove lodes at a depth or for diamond drilling.

(iv.) *The Mining Machinery Advances Act 1906.* Under this Act loans may be made for (*a*) procuring and erecting machinery for carrying on mining operations, or (*b*) procuring, erecting, or removing and re-erecting plant for treating minerals. Loans are granted by the Minister on the approval of the Governor in Council, interest at a rate not exceeding 5 per cent. per annum being charged. There is no limit to the amount which may be advanced, but the borrower must contribute £1 for £1 towards the work for which the loan is granted. The borrower must also execute a bill of sale or mortgage over the machinery or property, but the moneys advanced are not recoverable against the borrower personally, but only against the secured property.

(v.) *Amounts Granted or Advanced, 1909.* The total amount granted or advanced under the several systems above mentioned to the end of 1909 was as follows:—

QUEENSLAND.—PARTICULARS OF AMOUNTS GRANTED OR ADVANCED, 1909.

Purposes for which Granted, etc.	Prior to 1909.	During 1909.	Total to end of 1909.
	£	£	£
Assistance to prospectors	28,405	1,993	30,398
Grants for roads and bridges	13,521	1,793	15,314
Loans in aid of deep sinking	49,449	8,601	58,050
Advances under Act of 1906	2,450	1,301	3,751
Total	93,825	13,688	107,513

In addition special sums are occasionally granted or advanced in certain cases; for example, in 1908 sums of £2460 and £306 were advanced for the purposes of oil boring and coal prospecting, respectively.

5. **South Australia.**—By regulations made in February, 1894, under Part VI. of the Mining Act of 1893, and amended in January, 1899, provision is made for State aid to mining by way of:—(i.) Rewards to discoverers, (ii.) subsidies, and (iii.) loan of boring plant.

(i.) *Rewards to Discoverers.* Rewards may be paid to the discoverer (being the holder of a miner's right) of any new mineral district, or of any new and valuable deposits of metals, minerals, coal, or oil. The amount of the reward depends upon the distance of the discovery from the nearest payable mineral deposits already worked, and upon the number of men employed on the new field within six months after the report of the discovery has been made; the reward may not in any case exceed £1000. No rewards have yet been granted.

(ii.) *Subsidies.* Applications for subsidies may be made by any person engaged in deep sinking, prospecting, or mining. No subsidy may exceed 100 per cent. on the

amount proposed to be expended by the applicant, and the total grant to any one person or company may not exceed £1000. Fifty per cent. of the net profits must be applied in payment of the subsidy, and a bill of sale of all chattels belonging to the applicant and used in connection with the mine must be executed. If an applicant for assistance is mining on private land, the granting of a subsidy is subject to additional conditions. The total amount advanced by subsidies up to the 30th June, 1909, was £49,244; the number of individual persons or companies to whom subsidies were granted was ninety-nine, while the total repayments to date amounted to £6092.

(iii.) *Loan of Boring Plant.* The regulations also provide for the loan of diamond drills. There are two Government boring plants in South Australia, the capital expenditure thereon up to the 30th June, 1909, amounting to £6057.

(iv.) *Government Batteries and Cyaniding Plants.* There are four Government batteries and cyanide works in South Australia, the capital cost thereof amounting to £14,319. Up to the end of the year 1909 the total quantity of ore treated by these plants amounted to 16,902 tons, from which 13,367 ounces of gold, valued at £48,748, were extracted.

6. **Northern Territory.**—In the Northern Territory, Government assistance in the form of free rations is granted to prospectors and free assays are made. There are three Government boring plants, and two batteries and cyanide plants (both the latter being situated in the Macdonnell Ranges). The total amount of ores treated at the batteries up to the end of 1909 was 10,342 tons, from which 12,877 ounces of gold, valued at £47,710, were recovered.

7. **Western Australia.**—In this State, Government aid to mining is provided both under the Mining Development Act 1902 and under a more general vote for developmental purposes. A large amount of general developmental work has been carried out by the Government, particularly in regard to water supply; particulars of the eastern goldfields water-supply scheme may be found in the section of this book dealing with *Water Conservation and Irrigation* (see Section XIV. § 1). The Act of 1902, referred to above, is in many respects similar to the Victorian Act of 1896; its chief provisions may conveniently be considered under the headings indicated below.

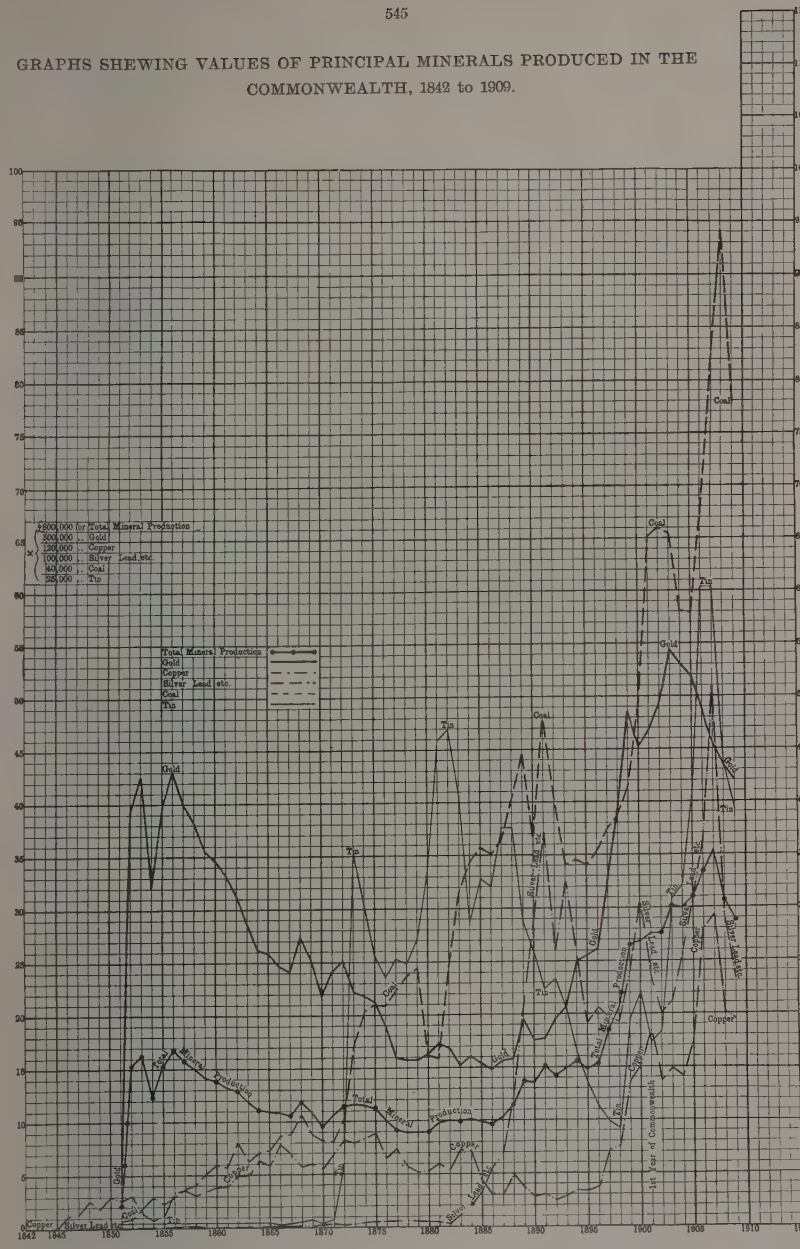
(i.) *Advances to Prospectors.* The Minister may, after obtaining a report from a professional officer, grant a loan not exceeding £300 to any miner who applies for assistance to enable him to prospect for gold or minerals. An applicant must furnish the necessary descriptions, statements, and information, verified by statutory declarations, and for every £1 advanced the borrower must expend £1 in work, labour, or material.

(ii.) *Advances for Pioneer Mining.* The purposes for which, and the conditions upon which, advances may be made are similar to those specified under Part 1 of the Victorian Act of 1896 (see 3 ii. above); the amount advanced to any one borrower is limited to £1000.

(iii.) *Establishment of Testing Plants.* Plant for crushing, ore-dressing, cyaniding, or smelting may either be established by the Minister or he may subsidise companies who are willing to erect and work such plant for the public at prescribed rates. Any such plant may only be erected in a district (*a*) in which large deposits of ore exist, (*b*) where existing plant for treating deposits in bulk at reasonable rates is not available, and (*c*) where the establishment of such plant is necessary for the development of mining.

In 1909 there were thirty-two State batteries and twenty-four cyanide plants in operation; there were also five slime plants and two tin-dressing plants. The total amount expended on the erection of State batteries up to the end of 1909 was £91,981 from revenue, and £183,339 from loan, giving a total of £275,320. The following statement shews the receipts and expenditure for the year 1909:—

GRAPHS SHEWING VALUES OF PRINCIPAL MINERALS PRODUCED IN THE COMMONWEALTH, 1842 to 1909.



(See pages—for total mineral production, 491; gold, 495; silver, 504; copper, 509; tin, 512; coal, 523.)

EXPLANATION OF GRAPHS.—The values shewn in the above diagrams are those of the total Commonwealth production of the most important minerals in successive years from 1842 to 1909.

The base of each small square represents an interval of one year, and the vertical height represents, in the case of gold £300,000; copper, £120,000; silver, lead, etc., £100,000; coal, £40,000; tin, £25,000; and total mineral production, £800,000.

The names of the various minerals are written on the graphs which respectively represent them, and the distinctive types of line used are exhibited in detail in the central portion of the diagram.

WESTERN AUSTRALIA.—RECEIPTS AND EXPENDITURE OF GOVERNMENT BATTERIES AND TESTING PLANTS, 1909.

Plant	Batteries.	Cyanide.	Slimes.	Tin.	Total.
	£	£	£	£	£
Receipts	44,927	26,883	8,052	915	80,777
Gross expenses	52,495	19,787	8,476	1,181	81,939

The total value of gold and tin produced to the end of 1909 at the State plants was £3,120,794, resulting from the treatment of 695,128 tons of gold ore and 41,723 tons of tin ore. The tonnage of stone milled during the year was 94,218 tons, producing 83,127 ozs. of gold; the tonnage of sands cyanided during the year was 61,032 for a yield of 12,957 ounces of gold; the slimes treated amounted to 16,848 tons, yielding 3258 ounces of gold. 5043 tons of tin ore were treated at a cost of £1181. At the commencement of 1908 a uniform charge of ten shillings per ton was instituted at gold ore plants, a reduction of nearly two shillings per ton on the average rates previously charged.

(iv.) *Assistance for Boring.* Subject to certain conditions the Minister may agree to pay not more than half the cost of boring either for gold, minerals, or water, and with the approval of the Governor and after receiving a report from the proper officer that such boring is in the general interest of the State, he may pay the whole cost.

(v.) *Miscellaneous.* The Minister may advance or himself expend moneys (*a*) to drain any area, (*b*) to assist mining by sinking or cross-cutting, (*c*) to sink shafts for minerals at great depths, and (*d*) to provide means of transport for miners to prospect unproved country.

vi.) *Particulars of Advances, 1909.* The following statement shews the sums advanced during the year 1909 under the provisions of the Mining Development Act:—

WESTERN AUSTRALIA.—ADVANCES MADE IN 1909 UNDER MINING DEVELOPMENT ACT, 1902.

Particulars.	Advances in aid of Mining Work and Equipment of Mines.	Advances in aid of Boring.	Subsidies to Crushing Plants.	Purchase of Boring Plants.	Providing Means of Transport.	Total.
Amount £	5,387	1,802	2,208	727	1,110	10,234

In addition to the above, amounts totalling £2661 were expended from the Mining Development Vote on various matters, such as water supply, roads, subsidies to assist cartage of ore, drainage, timber tramways, and subsidies for development work done below the 100 feet level in small mines. Subsidies to the extent of £2207 were paid to private crushing plants, the condition being that they crush for the public at fixed rates. The receipts under the Mining Development Act, exclusive of interest payments, amounted to £2263 for refunds of advances, and £166 for sales of plant, a total of £2429.

8. **Tasmania.**—The only provision made in Tasmania for State aid to mining is under the Deep-Sinking Encouragement Acts 1899, 1900, and 1901. Under these Acts sums of £5000, £2000, and £1000 respectively were provided for assisting persons and companies to sink shafts or to drive tunnels below a specified depth, the amount advanced in any particular case varying according to the amount expended by the borrower. The total amount advanced to October, 1909, was £6861, granted to five companies in sums ranging from £682 to £1452, leaving an unexpended balance of £1139. None of the companies to whom the advances were made have been successful, and consequently none of the sums advanced, which were to be repaid out of profits, has been refunded.

SECTION XIII.

MANUFACTURING INDUSTRIES.

§ 1. General.

1. **Industrial Progress.**—The statistics of manufactures in the Commonwealth during recent years shew that many industries have now been permanently established on a secure basis, and also indicate a fairly rapid, though in some cases a somewhat irregular, progress both in regard to the extension of existing industries and the establishment of new ones. The scale on which many manufactories are established in Australia, however, appears small in comparison with those established in older countries of the world; but it should be remembered that owing to the sparseness of its population Australia cannot at present maintain industries on a very extensive scale, and also that until the inauguration of the Commonwealth in 1901 the field was still further limited by intercolonial tariffs.

(i.) *The Gold Discoveries, 1851.* During the period prior to the gold discoveries (1851) little was done in regard to manufacturing industries in Australia. Such industries as had then been established were chiefly connected with the preparation of foodstuffs, and were to a large extent called into being by the isolated position of the country. It was found that, owing to the comparatively high prices which could be obtained for the products of the pastoral industry, those engaged in such pursuits in Australia could compete successfully in the world's markets. Owing to the sparseness of its population and to the distance of Australia from the world's centres of distribution, there was but little incentive towards any decided progress in agriculture, which was accordingly for many years almost entirely subsidiary to sheep and cattle raising. With the adoption of improved methods of agriculture, however, there were signs of an early extension in the cultivation of wheat, when the discovery of gold in 1851 completely changed the economic aspect in Australia and effected a revolution in all industrial relations. The large towns were practically depleted of their male able-bodied population, and the first effect of the gold rush upon manufacturing industries was disastrous. The supply of labour in many occupations was exhausted, and most branches of industry came to a standstill. There was, however, a rapid change. A decline in the activity of the goldfields threw many immigrants, whose early lives had been passed in English cities, out of employment. The surplus of labour thus engendered accumulated in Melbourne and a few other large towns, establishing incipient artisan communities. This no doubt intensified the early impulses towards industrial employment. In the State of Victoria, in particular, it was sought to encourage the investment of capital in manufacturing enterprises by the establishment of protective Customs duties. Manufacturing industries were revived on a larger scale than formerly, and the population attracted by the discovery of gold remained in Australia and furnished the labour necessary to operate the factories thus established.

(ii.) *Later Progress.* Soon after the discovery of gold the construction of the first railways (1854) and the re-establishment of regular steamship communication with Europe (1856) helped to encourage the industrial activity which commenced to appear. The States of New South Wales and Victoria, which had recently (1855) received the

benefits of responsible government, soon turned their attention to the settlement of an agricultural population on the land. The Acts which were passed (see Section VI., § 2) had a beneficial effect on the working classes, giving them opportunities for employment not previously open to them, and fostering the manufacturing industries by increasing the measure of primary production. During the following years the various manufacturing industries prospered. The statistics of the States are not sufficiently complete or uniform to enable a statement of the progress of these industries to be given. The following table, however, shewing, so far as returns are available, the number of factories and the number of employees in each State at decennial periods since 1861 and in 1909, will serve to indicate generally the progress which has been made:—

NUMBER OF FACTORIES AND EMPLOYEES IN EACH STATE, 1861 to 1909.

Year.	N.S.W.	Victoria.	Queensland.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
NUMBER OF FACTORIES.							
1861	601	531	...	...	...	...	...
1871	1,813	1,740	...	...	...	...	...
1881	2,961	2,488	571†	823†	...	...	...
1891	3,056	3,141	1,328†	996†	175	...	...
1901	3,367	4,003	2,110†	1,335†	662	420*	11,897‡
1909	4,581	4,755	1,420	1,265	632	544	13,197
NUMBER OF EMPLOYEES.							
1861	...	4,395	...	...	...	...	...
1871	13,583	19,569	...	5,629†	...	...	...
1881	31,191	43,209	...	10,995†	...	...	...
1891	50,879	53,525	...	14,099†	...	...	...
1901	66,135	73,063	26,172†	19,283†	12,198	7,466*	204,317‡
1909	91,702	97,355	29,504	25,709	12,813	9,322	266,405

* For 1902. † Not on same basis as other States. ‡ Not on same basis for some of States as in 1909.

Since the inauguration of the Commonwealth, the throwing open of the whole of the Australian markets to the industrial products of each State has facilitated the internal distribution of the products of Australian industry.

2. **Defects in Industrial Statistics.**—A complete statistical account of the growth of the manufacturing industries in Australia unfortunately cannot be given for any lengthy period, owing to the fact that the necessary statistics have not been collected in past years by the several States upon a definite and identical basis. Even in respect of either the definition of a "factory" or (so far as they might be included in related returns) the statistics of persons employed therein, there was formerly no common agreement. The relatively minor place that manufacturing industry held in relation to the total activity of Australia was, perhaps, responsible for the fact that the necessity for uniform method was not earlier recognised.

In 1896 it was agreed, as between Victoria and New South Wales, to adopt a common definition of the term "factory," viz., "any factory, workshop, or mill where four or more persons are employed or power is used." This agreement was adopted for the States generally at the Conference of State Statisticians in 1902, when it was decided, however, that the term "factory" should include also "all establishments, whether making for the trade, wholesale or retail, or for export." It was further agreed that

industries should be arranged, as far as possible, under a uniform classification. As a result of the conference of 1902 a higher degree of uniformity in the collection and presentation of industrial statistics was attained in the several States, so that returns upon which anything like a proper comparative study of the development and progress of various manufacturing industries in the Commonwealth may be based date back only as far as the year 1903, when the resolutions of the conference first came to be put into force. All the States did not, however, fall completely into line, and, as may be seen in the succeeding parts of this section, the comparisons afforded by the returns for the years 1903 to 1906 inclusive, are in some cases subject to various limitations. At the Conference of Statisticians held in Melbourne in 1906 special consideration was given to the methods to be adopted for the collection of statistical information regarding primary and secondary production and industry. A definite classification of industries was adopted, and a set of forms for the collection and compilation of industrial statistics on a definite and uniform basis in each State was agreed upon. The States have not, even yet, fallen entirely into line in collecting and classifying the returns. The particulars for the year 1909 are, however, in more complete co-ordination than those for previous years, and it is hoped that it will be possible to give particulars for future years for the several States in greater detail and on a perfectly uniform basis throughout.

3. **Classification of Manufacturing Industries.**—Under the classification adopted at the Conference of Statisticians held in 1906, factories were placed under nineteen different categories, according to the nature of the industry carried on therein; many of the categories were also subdivided. Where two or more industries are carried on by one proprietor in one building, each industry is, when possible, treated as a separate establishment. The statement given below shews the classification which has been adopted; it must be understood, however, that this classification does not pretend to be exhaustive, but merely serves as a guide for the collection and presentation of statistics in the several States on a definite and uniform basis:—

CLASSIFICATION OF MANUFACTURING INDUSTRIES.

CLASS I.—TREATING RAW MATERIALS, ETC.

Boiling-down, Tallow Refining, etc.
Tanneries
Woolscouring & Fellmong'ring
Chaff-cutting, etc.

CLASS II.—OILS AND FAT, ETC.

Oil and Grease
Soap and Candles

CLASS III.—STONE, CLAY, GLASS, ETC.

Bricks and Tiles
Glass (including Bottles)
Glass (Ornamental)
Lime, Plaster, Cement and Asphalt
Marble, Slate, etc.
Modelling, etc.
Pottery and Earthenware

CLASS IV.—WORKING IN WOOD.

Boxes and Cases
Cooperage
Joinery
Saw Mills
Wood-turning, etc.

CLASS V.—METAL WORKS, MACHINERY, ETC.

Agricultural Implements
Brass and Copper
Cutlery
Engineering
Galvanised Iron-working
Ironworks and Foundries
Lead Mills
Railway Carriages
Railway and Tramway Workshops
Smelting
Stoves and Ovens
Tinsmithing
Wireworking
Other Metal Works

CLASS VI.—FOOD AND DRINK, ETC.

Bacon Curing
Butter Factories
Butterine and Margarine
Cheese Factories
Condensed Milk
Meat and Fish Preserving
Biscuits
Confectionery
Corn-flour, Oatmeal, etc.
Flour Mills
Jam and Fruit Canning
Pickles, Sauces, and Vinegar
Sugar Mills
Sugar Refining
Aerated Waters, Cordials, etc.
Breweries
Condiments, Coffee, Spices, etc.
Distilleries
Ice and Refrigerating
Malting
Tobacco, Cigars, etc.

CLASS VII.—CLOTHING AND TEXTILE FABRICS.

Woollen and Tweed Mills
Boots and Shoes
Slop Clothing
Clothing (Tailoring)
Dressmaking and Millinery—
Makers' material
Customers' material
Dyeworks and Cleaning
Furriers
Hats and Caps
Waterproof and Oilskin
Shirts, Ties, and Scarfs
Rope and Cordage
Tents and Tarpaulins

CLASS VIII.—BOOKS, PAPER, PRINTING, ETC.

Electrotyping & Stereotyping
Paper-making, Paper Boxes, Bags, etc.
Photo-engraving
Printing and Binding

CLASS IX.—MUSICAL INSTRUMENTS, ETC.

Musical Instruments and Sewing Machines

CLASS X.—ARMS & EXPLOSIVES

Explosives

CLASSIFICATION OF MANUFACTURING INDUSTRIES.—Continued.

CLASS XI.—VEHICLES, SADDLERY, HARNESS, ETC.

Coach and Wagon Building
Cycles
Perambulators
Saddlery, Harness, etc.
Spokes, etc.

CLASS XII.—SHIP AND BOAT BUILDING AND REPAIRING.

Docks and Slips
Sailmaking
Ship and Boat Building and Repairing

CLASS XIII.—FURNITURE, BEDDING, ETC.

Bedding, Flock, & Upholstery
Billiard Tables
Furniture and Cabinet Making
Picture Frames
Window Blinds

CLASS XIV.—DRUGS AND CHEMICALS, ETC.

Chemicals, Drugs, and Medicines
Fertilisers
Paints, Varnishes, and By-products

CLASS XV.— SURGICAL AND OTHER SCIENTIFIC INSTRUMENTS.

Surgical, Optical, and other Scientific Instruments

CLASS XVI. — TIMEPIECES, JEWELLERY, & PLATED WARE.

Electro-plating
Manufacturing Jewellery, etc.

CLASS XVII.— HEAT, LIGHT, AND POWER.

Coke Works
Electric Apparatus
Electric Light and Power
Gas Works and Kerosene
Lamps and Fittings, etc.
Hydraulic Power

CLASS XVIII.—LEATHERWARE (N.E.I.)

Leather Belting, Fancy Leather, Portmanteaux & Bags

CLASS XIX.—MINOR WARES.

Basket and Wickerware, Matting, etc.
Brooms and Brushware
Rubber Goods
Toys
Umbrellas
Other Industries

§ 2. Number of Manufactories.

1. **General.**—In stating the number of factories in the States of the Commonwealth it is to be remembered that in the collection of statistics, for years prior to 1907, the same basis has not been adopted in each State. In 1906 in Queensland, for example, 689 factories would have been added under the system previously adopted in that State. This would bring the total up to 1993 on the former basis. The factories excluded, however, are those employing only two hands and no power, and the difference in other respects is not material.

In the following table shewing the total number of manufactories in the Commonwealth during the years 1903 to 1909, it should be noted that not only are the results affected by differences of classification, but also that the number of factories from year to year does not unequivocally indicate a change in the position of the industry, since amalgamations may account for part of the reduction of the numbers. Thus in Melbourne a number of breweries have been combined under a single company, and, of the number thus amalgamated, it is intended to keep only three breweries active.

MANUFACTORIES OF THE COMMONWEALTH, 1903 to 1909.

Year.	N.S.W.	Victoria.	Queensland.	South Aust.	West. Aust.	Tasmania.	C'wealth.
1903 ...	3,476	4,151	2,001*	906*†	586	431	11,551
1904 ...	3,632	4,208	1,909*	906*	672	444	11,771
1905 ...	3,700	4,264	1,911*	985	649	436	11,945
1906 ...	3,861	4,360	1,304	1,012	665	373	11,575
1907 ...	4,432	4,530	1,359	1,086	643	505	12,555
1908 ...	4,453	4,608	1,371	1,237	627	557	12,853
1909 ...	4,581	4,755	1,420	1,265	632	544	13,197

* Not on same basis as other States. † 1904 results repeated.

(i.) *Classification of Factories in Commonwealth, 1905 to 1909.* The following table shews the total number of factories in the Commonwealth at the end of each year from 1905 to 1909, classified on the basis indicated in § 1. 3 hereof:—

CLASSIFICATION OF FACTORIES IN THE COMMONWEALTH, 1905 to 1909.

Class of Industry.	1905.	1906.	1907.	1908.	1909.
I. Treating raw material, product of agricultural and pastoral pursuits, etc.	751	742	807	812	823
II. Treating oils and fats, animal, vegetable, etc.	112	99	92	97	94
III. Processes in stone, clay, glass, etc.	625	610	626	627	645
IV. Working in wood	1,126	1,119	1,215	1,322	1,411
V. Metal works, machinery, etc.	1,528	1,394	1,504	1,548	1,588
VI. Connected with food and drink, etc.	2,253	2,177	2,250	2,253	2,258
VII. Clothing and textile fabrics, etc.	2,315	2,335	2,661	2,681	2,774
VIII. Books, paper, printing and engraving	907	919	964	993	1,011
IX. Musical instruments, etc.	10	10	16	17	18
X. Arms and explosives	8	8	8	8	9
XI. Vehicles and fittings, saddlery and harness, etc	1,087	941	1,071	1,105	1,117
XII. Ship and boat building and repairing	95	83	70	76	84
XIII. Furniture, bedding, and upholstery	441	418	470	483	512
XIV. Drugs, chemicals, and by-products	150	156	144	153	164
XV. Surgical and other scientific instruments	23	26	26	28	30
XVI. Jewellery, timepieces, and platedware	110	121	142	153	150
XVII. Heat, light, and power	263	272	309	307	314
XVIII. Leatherware, n.e.i.	33	41	45	54	55
XIX. Minor wares, n.e.i.	108	104	135	136	140
Total	11,945	11,575	12,555	12,853	13,197

For the purpose of the returns in the above table the definition of a factory adopted at the Conference of Statisticians in 1902 (see § 1. 2 hereof) is used, viz., "Any factory, workshop or mill where four or more persons are employed or power is used." The total increase in the number of factories according to this table from 1905 to 1909 was 1252, or an average of 313 a year. The state of the manufacturing industries throughout Australia cannot, however, be gauged from a mere enumeration of the number of factories. Some of the factories concerned were practically in their infancy, employing but few hands, while others were developed on a large scale. Also, as pointed out previously, amalgamations may in some instances account for a reduction in the numbers.

(ii.) *Classification of Factories in each State, 1909.* The following table shews the number of factories in each State of the Commonwealth at the end of the year 1909, classified according to the nature of the industry. (See classification given in § 1. 3 hereof):—

CLASSIFICATION OF FACTORIES IN EACH STATE, 1909.

Class of Industry.	N.S.W.	Vic.	Q'land.	S. Aus.	W. Aus.	Tas.	Cwlth.
I. Treating raw material, product of agricul. and pastoral pursuits, etc.	283	327	41	128	26	18	823
II. Treating oils and fats, animal, vegetable, etc.	35	22	18	14	3	2	94
III. Processes in stone, clay, glass, etc.	274	198	38	75	35	25	645
IV. Working in wood	574	329	241	92	62	113	1,411
V. Metal works, machinery, etc.	449	652	204	173	62	48	1,588
VI. Connected with food and drink, etc.	761	639	364	256	145	93	2,258
VII. Clothing and textile fabrics, etc.	899	1,299	124	217	121	114	2,774
VIII. Books, paper, printing & engraving	381	355	128	67	54	26	1,011
IX. Musical instruments, etc.	12	4	...	2	...	...	18
X. Arms and explosives	3	6	...	...	...	...	9
XI. Vehicles and fittings, saddlery and harness, etc.	344	404	130	139	43	57	1,117
XII. Ship and boat building & repairing	39	13	12	7	5	8	84
XIII. Furniture, bedding, and upholstery	160	209	64	40	27	12	512
XIV. Drugs, chemicals, and by-products	69	70	3	11	9	2	164
XV. Surgical and other scientific instruments	11	10	5	2	2	...	30
XVI. Jewellery, timepieces, & platedware	42	64	13	15	4	12	150
XVII. Heat, light, and power	175	72	24	9	24	10	314
XVIII. Leatherware, n.e.i.	16	31	2	4	2	...	55
XIX. Minor wares, n.e.i.	54	51	9	14	8	4	140
Total	4,581	4,755	1,420	1,265	632	544	13,197

2. **Use of Mechanical Power.** — The principal motive power is steam, but the chief towns possess electric power stations owned either by the Government, or by public bodies or private companies. From these many manufactories find it convenient to derive their motive power. The distinction between factories employing steam, gas, oil, or electric machinery, and those employing either other power or none at all, affords an opportunity of ascertaining how many factories there are in the ordinary sense of the word, that is, establishments which are not merely workshops. For instance, in the Victorian clothing trade, out of 374 factories only 66 employ mechanical power, the balance may consequently be regarded merely as workshops.

The following table shews the number of factories in which machinery was worked by steam, gas, oil, or electricity, and the horse-power of engines or motors used, in each State and in the Commonwealth, during the year 1909 :—

UTILISATION OF MECHANICAL POWER IN FACTORIES IN EACH STATE, 1909.

State.	Number of Establishments.			Actual Horse-power of Engines Used.				
	Using Machinery worked by Steam Gas, Oil, or Electricity	Others.	Total.	Steam.	Gas.	Oil.	Electricity.	Total.
	No.	No.	No.	H.P.	H.P.	H.P.	H.P.	H.P.
New South Wales	3,089	1,492	4,581	89,917	8,658	543	11,773	110,891
Victoria	2,959	1,796	4,755	47,403	8,446	1,166	6,746	63,761
Queensland ...	1,015	405	1,420	28,230	2,283	526	1,401	32,440
South Australia ...	863	402	1,265	17,126	3,445	1,525	2,317	24,413
Western Australia	459	173	632	20,364	713	702	2,588	24,367
Tasmania	321	223	544	15,784	204	68	5,036	21,092
Commonwealth	8,706	4,491	13,197	218,824	23,749	4,530	29,861	276,96

A comparison of the above table with that immediately preceding will explain th preponderance of horse-power employed in the New South Wales factories, this State possessing by far the largest number of industries connected with heat, light, and power, wood-working, &c., viz., industries demanding a considerable amount of power.

The percentage for the Commonwealth of the number of establishments using machinery worked by steam, gas, oil, or electricity on the total number of establishments was 65.97. The total average horse-power in use was 276,964, of which engines in which the motive power was steam formed 79.01 per cent. ; gas, 8.57 per cent.; oil, 1.64 per cent.; and electricity, 10.78 per cent.

§ 3. Number Employed in Australian Factories.

1. **Total Number Employed.**—Each person employed in and about a factory, in whatever capacity, is now included as a factory employee, consequently every proprietor who works in his business is counted as an employee, and all "outworkers" (see paragraph 6 hereinafter) are also included. The individuals embraced may be classed under the following heads, viz. :—(i.) Working proprietors; (ii.) managers and overseers; (iii.) accountants and clerks; (iv.) enginedrivers and firemen; (v.) skilled and unskilled workers in the factories, mills, or workshops; (vi.) carters and messengers; and (vii.) others.

(i.) *Average Numbers Employed, 1904 to 1909.* The following table shews, for each year from 1904 to 1909 inclusive, (*a*) the average numbers of persons (including both sexes and all ages) employed in manufacturing industries in each State; (*b*) the percentage of the numbers employed in each State on the total numbers employed in the Commonwealth; and (*c*) the numbers employed per ten thousand of the mean population in each State and the Commonwealth :—

AVERAGE NUMBER OF PERSONS EMPLOYED IN MANUFACTURING INDUSTRIES, 1904 TO 1909.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
AVERAGE NUMBER.							
1904 ...	68,036	76,287	20,058	18,049	12,685	8,224	203,339
1905 ...	72,175	80,235	21,705	19,273	12,733	8,468	214,589
1906 ...	77,822	85,229	23,961	20,153	12,897	8,498	228,560
1907 ...	86,467	90,903	27,954	22,701	12,625	8,209	248,859
1908 ...	89,098	93,808	29,200	24,236	12,425	8,727	257,494
1909 ...	91,702	97,355	29,504	25,709	12,813	9,322	266,405
PERCENTAGE ON COMMONWEALTH TOTAL.							
	%	%	%	%	%	%	%
1904 ...	33.44	37.49	9.86	8.94	6.23	4.04	100.00
1905 ...	33.62	37.37	10.11	9.03	5.93	3.94	100.00
1906 ...	34.03	37.26	10.47	8.88	5.64	3.72	100.00
1907 ...	34.75	36.53	11.23	9.12	5.07	3.30	100.00
1908 ...	34.60	36.42	11.34	9.42	4.83	3.39	100.00
1909 ...	34.42	36.54	11.08	9.65	4.81	3.50	100.00
PER 10,000 OF MEAN POPULATION.							
1904 ...	472	632	386*	492	536	460	515
1905 ...	489	662	413*	518	509	472	534
1906 ...	515	696	450	534	496	475	560
1907 ...	558	734	519	589	481	458	599
1908 ...	563	745	531	609	469	480	608
1909 ...	571	758	513	626	473	506	616

* Inclusive of factories with two persons.

(ii.) *Rates of Increase, 1904 to 1909.* From the preceding table it may be seen that, except in Western Australia, there has been a general increase in the average number of persons employed in manufacturing industries during the period referred to. The following table shews the percentage of increase during each year on the average number for the preceding year:—

PERCENTAGES OF INCREASE IN AVERAGE NUMBER EMPLOYED, 1904 to 1909.

Years.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
1903-4 ...	3.66	4.18	4.15	...	7.24	5.64	3.84
1904-5 ...	6.08	5.18	8.21	6.67	0.38	3.61	5.52
1905-6 ...	7.82	6.22	10.38	4.70	1.29	0.45	6.52
1906-7 ...	11.11	6.66	16.67	11.80	— 2.25	— 3.49	8.80
1907-8 ...	3.04	2.75	4.46	6.90	— 1.44	6.31	3.49
1908-9 ...	2.92	3.78	1.04	5.94	3.12	6.82	3.45

Note.— (—) signifies a decrease.

2. **Classification of Numbers Employed in Factories in the Commonwealth, 1905 to 1909.**—The following table gives a classification of the average numbers of persons employed in factories of different descriptions in the Commonwealth during the years 1905 to 1909 inclusive :—

AVERAGE NUMBER OF PERSONS EMPLOYED IN VARIOUS FACTORIES IN COMMONWEALTH, 1905 to 1909.

Class of Industry.	1905.	1906.*	1907.	1908.	1909.
I. Treating raw material, product of agricultural and pastoral pursuits, etc.	7,460	7,809	8,956	9,042	9,306
II. Treating oils and fats, animal, vegetable, etc.	1,717	1,760	1,727	1,735	1,812
III. Processes in stone, clay, glass, etc.	8,285	8,779	8,909	9,420	9,605
IV. Working in wood	16,938	18,347	19,457	21,310	22,487
V. Metal works, machinery, etc.	40,061	43,331	47,060	48,505	49,753
VI. Connected with food and drink, etc.	35,026	36,720	40,228	40,652	41,006
VII. Clothing and textile fabrics, etc.	59,095	62,594	68,373	70,075	73,554
VIII. Books, paper, printing and engraving	18,441	19,565	20,733	21,448	21,943
IX. Musical instruments, etc.	384	386	430	444	433
X. Arms and explosives	280	347	323	339	377
XI. Vehicles and fittings, saddlery and harness, etc.	8,780	9,027	10,288	10,784	11,366
XII. Ship and boat building and repairing	1,964	2,124	2,049	2,278	2,220
XIII. Furniture, bedding and upholstery	5,422	5,890	6,819	7,117	7,638
XIV. Drugs, chemicals and by-products	2,373	2,600	2,895	3,086	3,391
XV. Surgical and other scientific instruments	146	178	170	176	173
XVI. Jewellery, timepieces, and platedware	1,237	1,397	1,700	1,771	1,800
XVII. Heat, light, and power	4,443	4,834	5,372	5,754	5,986
XVIII. Leatherware, n.e.i.	592	731	788	893	924
XIX. Minor wares, n.e.i.	1,945	2,041	2,564	2,665	2,631
Total	214,589	228,560	248,841	257,494	266,405

* Excluding Queensland Government Railways. For preceding years the Queensland statistics include all establishments where two or more hands were employed except Government Railway workshops.

The total increase in the average number of hands employed from 1905 to 1909 was 51,816, or an annual average of 12,954. The increase was general throughout all the various classes of industry. The greatest development took place in Classes VII. and V., the increases being 14,459 and 9692 respectively.

3. **Classification of Numbers Employed in each State, according to Class of Industry, 1909.**—The following table shews a similar classification of employees in manufacturing industries in each State for the year 1909:—

AVERAGE NUMBER OF PERSONS EMPLOYED IN VARIOUS FACTORIES IN EACH STATE, 1909.

Class of Industry.	N.S.W.	Vic.	Q'land.	S. Aus.	W. Aus.	Tas.	C'wlth.
I. Treating raw material, product of agricul. and pastoral pursuits, etc.	3,800	3,329	692	1,103	256	126	9,306
II. Treating oils and fats, animal, vegetable, etc.	694	612	174	243	50	39	1,812
III. Processes in stone, clay, glass, etc.	4,135	3,308	484	1,094	377	207	9,605
IV. Working in wood	6,690	5,320	3,633	1,524	3,872	1,448	22,487
V. Metal works, machinery, etc.	18,755	14,153	5,220	6,927	2,180	2,518	49,753
VI. Connected with food and drink, etc.	12,331	13,333	8,915	3,461	1,424	1,542	41,006
VII. Clothing and textile fabrics, etc.	23,161	36,176	4,880	5,384	2,285	1,668	73,554
VIII. Books, paper, printing & engraving	8,045	7,983	2,479	1,739	1,026	671	21,943
IX. Musical instruments, etc.	370	40	...	23	...	...	433
X. Arms and explosives	31	346	...	...	...	...	377
XI. Vehicles and fittings, saddlery, and harness, etc.	3,683	3,998	1,145	1,656	473	411	11,366
XII. Ship and boat building & repairing	1,796	128	104	104	41	47	2,220
XIII. Furniture, bedding, and upholstery	2,846	2,462	887	884	293	266	7,638
XIV. Drugs, chemicals, and by-products	1,202	1,427	54	621	71	16	3,391
XV. Surgical and other scientific instruments	84	50	22	8	9	...	173
XVI. Jewellery, timepieces, & platedware	608	797	137	168	39	51	1,800
XVII. Heat, light, and power	2,332	2,076	470	513	303	292	5,986
XVIII. Leatherware, n.e.i.	322	497	59	30	16	...	924
XIX. Minor wares, n.e.i.	817	1,320	149	227	98	20	2,631
Total	91,702	97,355	29,504	25,709	12,813	9,322	266,405

The largest number employed in any particular class in the Commonwealth was in Class VII., in which there were 73,554 employees, or 27.69 per cent. on the whole number. The class affording employment to the smallest number of hands was Class XV., in which there were 173 hands, or 0.06 per cent. on the total number of employees. Classes VI., VII., and VIII. comprise those industries in which female labour is largely employed. (See § 4 hereof.)

4. **Classification of Numbers Employed in each State according to Nature of Employment, 1909.**—In the following table the average numbers of persons employed in each State during the year 1909 are classified according to the nature of their employment:—

AVERAGE NUMBER OF PERSONS EMPLOYED IN EACH STATE, CLASSIFIED ACCORDING TO NATURE OF EMPLOYMENT, 1909.

State.	Average Number of Persons Employed.						
	Working Proprietors.	Managers and Overseers	Accountants and Clerks.	Engine-drivers and Firemen.	Workers, Skilled & Unskilled in Factory Mill or Workshop	Carters, Messengers and Others.	Total.
New South Wales ...	3,868	3,043	3,218	2,390	77,235	1,948	91,702
Victoria	4,815	2,744	3,071	1,560	81,244	3,921	97,355
Queensland ...	1,194	985	1,178	1,235	23,009	1,903	29,504
South Australia ...	1,291	584	902	504	21,352	1,076	25,709
Western Australia ...	487	477	480	380	9,894	1,095	12,813
Tasmania	511*	342*	364	359	7,341	405	9,322
Commonwealth ...	12,166	8,175	9,213	6,428	220,075	10,348	266,405

* Estimated.

5. **Classification of Factories according to Number of Hands Employed, 1909.**—The number of factories in each State classified according to the number of hands employed, and the total number of hands employed in each class of factory, are shewn in the following table:—

CLASSIFICATION OF FACTORIES ACCORDING TO NUMBER OF HANDS EMPLOYED, 1909.

No. of Persons Employed in each Factory.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	NUMBER OF FACTORIES.						
Under 4 ...	712	689	180	140	107	143	1,971
4 ...	481	579	168	133	52	60	1,473
5 to 10 ...	1,644	1,710	511	499	213	168	4,745
11 to 20 ...	831	843	244	237	133	92	2,380
21 to 50 ...	558	577	181	160	83	50	1,609
51 to 100 ...	202	197	79	55	28	16	577
Over 100 ...	153	160	57	41	16	15	442
Total ...	4,581	4,755	1,420	1,265	632	544	13,197

CLASSIFICATION OF FACTORIES ACCORDING TO NUMBER OF HANDS—Continued.

No. of Persons Employed in each Factory.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
TOTAL AVERAGE NUMBER OF HANDS EMPLOYED.							
Under 4 ...	1,622	1,671	421	357	233	340	4,644
4 ...	1,924	2,316	672	532	208	240	5,892
5 to 10 ...	11,425	11,905	3,478	3,454	1,470	1,169	32,901
11 to 20 ...	12,170	12,247	3,582	3,404	1,891	1,314	34,608
21 to 50 ...	17,206	17,754	5,744	4,977	2,676	1,615	49,972
51 to 100 ...	14,104	13,465	5,711	3,853	1,813	1,066	40,012
Over 100 ...	33,251	37,997	9,896	9,132	4,522	3,578	98,376
Total ...	91,702	97,355	29,504	25,709	12,813	9,322	266,405

6. **Outworkers.**—The term "outworker" or "homeworker" has acquired a special meaning in connection with manufacturing industries, and technically embraces only those to whom work is given out by factory owners to be wrought upon in their own homes. Individuals working for themselves are not included. The following table gives particulars, so far as available, of the average number of outworkers connected with factories in each State during each year from 1904 to 1909 inclusive :—

NUMBER OF OUTWORKERS CONNECTED WITH FACTORIES, 1904 to 1909.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
1904 ...	439	991	*	*	*	42	*
1905 ...	374	1,186	*	*	*	86	*
1906 ...	501	1,431	*	*	*	57	*
1907 ...	592	1,429	264	66	18	60	2,429
1908 ...	596	1,457	171	74	11	11	2,320
1909 ...	630	1,695	144	65	13	...	2,547

* Not available.

Although the figures from 1904 to 1909, for the States of New South Wales and Victoria, shew generally a fairly steady increase in the number of outworkers, they are considerably smaller than the figures for early years. For example, in 1897 there were 2382 outworkers registered in Victoria in the clothing trades, while the number of employees in factories for those trades was 14,293. The corresponding figures for the same year in New South Wales were 546 outworkers and 8602 factory employees. Thus it will be seen that the number of employees in factories has largely increased, while the increase in the number of outworkers has been relatively small.

The Factories Acts in each State contain provisions regulating the employment of outworkers. Generally records of out-work must be kept by factory proprietors, specifying the names and remuneration of workers, and stating the places where the work is done. Further particulars are given in a later part of this book. (See Section XXVII. *Industrial Unionism and Industrial Legislation.*)

§ 4. Sex Distribution in Factories.

1. **Employment of Females in Factories.**—In all the States the employment of female labour in factories is now regulated by Act of Parliament. In Victoria the first Act dealing with the subject was passed in the year 1873, and provided that no female should be employed for more than eight hours a day without the permission of the Chief

Secretary. The number of working hours for women is now limited to forty-eight per week in all the States except Tasmania, where the maximum number of working hours is ten per day. The maximum periods of continuous labour, and the intervals of cessation therefrom, are also prescribed by the several Acts. Further reference is made to the restrictions regarding the employment of females in a later part of this book. (See Section XXVII. *Industrial Unionism and Industrial Legislation.*)

2. **Distribution of Employees according to Sex, 1905 to 1909.**—In New South Wales the ratio of the number of females employed in factories to the number of males during 1886 was about one to seven; in 1891 one to six; in 1903 it became about one to four; and is now rather lower than one to three. In Victoria the ratio of females to males during the year 1886 was about one to five. Five years later (1891) it was somewhat less, but in 1896 had increased to about one woman to three men, and at present is about one to two. The employment of women is, however, largely confined to a few trades.

The great prosperity in clothing and textile industries is one of the main causes of increase in female employment. Large numbers are occupied in tailoring and dress making, in wholesale manufactories, in tobacco factories, and preserving works. Certain trades are specifically known as women's trades, such as clothing and textile trades, preparation of food, book-binding, and lighter work connected with the drug trade, as for example wrapping. In common with commercial establishments, a considerable number of women are also employed as clerks and typewriters in factories.

(i.) *Average Number of Males and Females Employed, 1905 to 1909.* The following table shews the average number of male and female employees, so far as available, in factories in each State from 1905 to 1909:—

AVERAGE NUMBER OF MALES AND FEMALES EMPLOYED IN MANUFACTURING INDUSTRIES, 1905 to 1909.

State.	1905.	1906.	1907.	1908.	1909.
			MALES.		
New South Wales	56,111	59,979	65,953	67,616	69,184
Victoria	52,925	56,339	59,691	60,873	62,822
Queensland	*18,105	*19,961	23,191	24,639	24,877
South Australia	15,832	16,451	18,423	19,640	20,753
Western Australia	11,091	11,015	10,671	10,453	10,701
Tasmania	7,105	7,220	6,972	7,334	7,889
Commonwealth	161,169	170,965	184,901	190,555	196,226
			FEMALES.		
New South Wales	16,064	17,843	20,514	21,482	22,518
Victoria	27,310	28,890	31,212	32,935	34,533
Queensland	*3,600	*4,000	4,763	4,561	4,627
South Australia	3,441	3,702	4,278	4,596	4,956
Western Australia	1,642	1,882	1,954	1,972	2,112
Tasmania	1,363	1,278	1,237	1,393	1,433
Commonwealth	53,420	57,595	63,958	66,939	70,179

* Estimated.

It will be seen that during the years specified there has been for the whole Commonwealth a total increase in the number of male employees of 35,057, or an annual average of 8764, and in the number of female employees a total increase of 16,759, or an annual average of 4190.

(ii.) *Average Number of Males and Females Employed per 10,000 of Mean Population, 1905 to 1909.* The following table shews the average number of male and female employees per 10,000 of the mean male and female population respectively in each State from 1905 to 1909 :—

AVERAGE NUMBER OF MALE AND FEMALE FACTORY EMPLOYEES PER 10,000 OF MEAN MALE AND FEMALE POPULATION RESPECTIVELY, 1905 to 1909.

State.	1905.	1906.	1907.	1908.	1909.
MALES.					
New South Wales	717	746	796	801	809
Victoria	871	919	963	969	976
Queensland	*624	*682	789	823	808
South Australia	815	821	902	929	946
Western Australia	752	724	696	679	683
Tasmania	762	775	753	785	834
Commonwealth	755	787	844	854	862
FEMALES.					
New South Wales	232	253	284	292	300
Victoria	450	471	503	522	539
Queensland	*151	*165	194	182	180
South Australia	210	213	235	246	259
Western Australia	162	177	179	177	185
Tasmania	158	146	143	157	160
Commonwealth	278	296	326	334	343

* Estimated.

3. **Rate of Increase for each Sex.**—The percentages of annual increase during the years 1905 to 1909 in the average number of males and females employed in manufacturing industries, are shewn below for the whole Commonwealth.

PERCENTAGES OF ANNUAL INCREASE IN NUMBERS OF MALE AND FEMALE EMPLOYEES, COMMONWEALTH, 1905 to 1909.

Particulars.	1904-5.	1905-6.	1906-7.	1907-8.	1908-9.
Males ... ... %	5.25	6.08	8.15	3.06	2.98
Females ... %	6.40	7.81	11.05	4.66	4.84

The above table shews that there has been relatively a larger increase in the number of female than in the number of male employees. This matter is referred to further in the following paragraph hereof. The subjoined statement shews the percentages of annual increase in each State during the last year (1908-9) :—

PERCENTAGES OF INCREASE IN AVERAGE NUMBER OF MALE AND FEMALE EMPLOYEES, 1908-9.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
Males ... %	2.32	3.20	0.97	5.67	2.37	7.57	2.98
Females ... %	4.82	4.85	1.45	7.83	7.10	2.87	4.84

4. **Increasing Ratio of Female Employment in Factories.**—The increasing extent to which females are employed in the factories of the Commonwealth may perhaps be best shewn by giving the number of females to every 100 male employees for each State for each year and from 1904 to 1909, inclusive:—

NUMBER OF FEMALES PER 100 MALES IN AUSTRALIAN FACTORIES, 1904 to 1909.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
1904	27.27	50.90	*19.89	26.07	14.51	19.53	32.78
1905	28.63	51.60	*19.89	22.35	14.80	19.46	33.15
1906	29.75	51.28	*20.04	23.31	17.09	17.68	33.69
1907	31.10	52.29	20.53	23.22	18.19	17.74	34.58
1908	31.77	54.10	18.51	23.36	18.86	18.99	35.12
1909	32.55	54.97	18.60	23.88	19.74	18.16	35.76

* Estimated.

Although this table shews that from 1904 to 1909 there has been an increase in the percentage specified from 32.78 to 35.76, the tables given in the next succeeding paragraph shew that this increase has not been due so much to the incursion of female labour into what may be termed men's trades, as to the activity in those trades in which women are ordinarily engaged, more especially in dressmaking, millinery, etc.

5. **Employment of Females in Particular Industries, 1909.**—The employment of women in manufacturing industries in Australia is largely confined to a few trades, of which the more important are comprised in Classes VI., VII., and VIII. (see § 1. 3 above), viz., in connection with food, drink, etc., clothing and textile fabrics, and books, paper, printing, etc. The following table shews the average number of females employed in each of these classes during the year 1909 in each State, and also shews the percentages of the average number so employed on the total average number of females employed in all classes of factories :—

AVERAGE NUMBER OF FEMALES EMPLOYED IN PARTICULAR INDUSTRIES AND PERCENTAGES ON AVERAGE TOTAL EMPLOYED, 1909.

Class.	N.S.W.	Vict.	Q'land.	S. Aust.	W.Aust.	Tas.	Cwlth.
AVERAGE NUMBER.							
VI. Food, drink, etc.	2,831	3,731	511	474	121	261	7,929
VII. Clothing and textile fabrics ...	16,169	26,984	3,446	3,837	1,768	1,059	53,263
VIII. Books, paper, printing, etc. ...	1,909	2,083	417	461	151	66	5,087
Total	20,909	32,798	4,374	4,772	2,040	1,386	66,279
PERCENTAGES ON TOTAL AVERAGE FEMALE EMPLOYEES.							
VI. Food, drink, etc.	12.57	10 80	11.04	9.56	5.73	18.21	11.30
VII. Clothing and textile fabrics ...	71.80	78.14	74.48	77.42	83.71	73.90	75.89
VIII. Books, paper, printing, etc. ...	8.48	6.03	9.01	9.30	7.15	4.61	7.25
Total	92.85	94.97	94.53	96.28	96.59	96.72	94.44

It will be seen that by far the greater part of the total number of females employed in factories work in one or other of the three classes of industry indicated, Class VII. being the most important.

The classification of the employment of women in Class VII. in the two States of largest population is of interest. The following table shews, also, for the sake of comparison, the number of males employed:—

NEW SOUTH WALES AND VICTORIA.—EMPLOYMENT IN CLASS VII., 1909.

Class VII.	New South Wales.		Victoria.	
	Males.	Females.	Males.	Females.
Woollen and tweed mills	283	345	794	923
Boots and shoes	2,854	1,606	4,423	2,471
Slop clothing ... ... } Clothing (tailoring) ... ... }	2,868	7,175	2,083	6,833
Dressmaking and millinery	56	4,399	230	9,092
Dyeworks and cleaning	36	25	51	75
Furriers	16	22	28	74
Hats and caps	398	951	642	1,046
Waterproof and oilskin	28	124	43	134
Shirts, ties, and scarves	103	1,315	301	5,820
Rope and cordage	209	3	501	367
Tents and tarpaulins	141	204	87	49
Other	...	...	9	100
Total	6,992	16,169	9,192	26,984

§ 5. Child Labour in Factories.

1. **Conditions of Child Labour.**—The employment of young persons in factories in each State of the Commonwealth is regulated by Acts of Parliament in a similar manner to the employment of female labour. Excepting under special circumstances, children under a certain age may not be employed in factories. The minimum age in New South Wales, Queensland, and Western Australia is fourteen, and in the other States is thirteen years. Other restrictions on the employment of young persons in factories are more particularly referred to in a later part of this book. (See Section XXVII. *Industrial Unionism and Industrial Legislation.*) The general object of the restrictions imposed is to assure that a proper period shall be devoted to primary education, and that the early years of toil shall not exhaust the worker before the attainment of full growth.

2. **Average Number of Children Employed in Factories, 1905 to 1909.**—In the statistical compilations of the various States the term "child" may be taken to denote any person under sixteen years of age, excepting in New South Wales, where it denoted, for years prior to 1907, any person under fifteen. The following table shews the average number of children of each sex employed in manufacturing industries in each State during the years 1905 to 1909. It will be seen that the Commonwealth figures for years prior to 1907 are incomplete. There have been increases in the average number employed in New South Wales and Western Australia during the period under review; Victoria, South Australia and Tasmania, however, shew slight decreases; this also obtains in the case of Queensland for the years for which information is available.

AVERAGE NUMBER OF CHILDREN EMPLOYED IN FACTORIES, 1905 to 1909.

State.	1905.	1906.	1907.	1908.	1909.
MALES.					
New South Wales	668	881	2,406	2,475	2,433
Victoria	3,261	3,213	3,253	3,049	2,817
Queensland	*	*	1,119	1,034	1,001
South Australia	1,362	1,166	1,127	1,179	1,094
Western Australia	197	203	216	289	289
Tasmania	284	251	214	239	257
Commonwealth	†5,772	†5,714	8,335	8,265	7,891
FEMALES.					
New South Wales	473	579	1,880	1,859	1,973
Victoria	3,034	2,997	3,095	3,065	2,496
Queensland	*	*	576	583	556
South Australia	324	400	480	568	577
Western Australia	81	126	159	251	242
Tasmania	128	99	97	135	128
Commonwealth	†4,040	†4,201	6,287	6,461	5,972
TOTAL.					
New South Wales	1,141	1,460	4,286	4,334	4,406
Victoria	6,295	6,210	6,348	6,114	5,313
Queensland	*	*	1,695	1,617	1,557
South Australia	1,686	1,566	1,607	1,747	1,671
Western Australia	278	329	375	540	531
Tasmania	412	350	311	374	385
Commonwealth	†9,812	†9,915	14,622	14,726	13,863

* Not available. † Incomplete.

The relatively large increase in the figures for the Commonwealth for the year 1907 is accounted for largely by the fact that in New South Wales, the term "child" denoted any person under the age of fifteen years, which, in 1907, was raised to sixteen years in order to come into line with the other States of the Commonwealth. It should be noted also that the Commonwealth figures for the years 1905 and 1906 are exclusive of returns for Queensland.

3. **Industries Employing Child Labour, 1909.**—The employment of children is largely confined to a limited number of industries, the most important of which are specified in the table below, which shews the average number of children of each sex, employed in the several industries indicated, in each State during the year 1909:—

NUMBER OF CHILDREN ENGAGED IN VARIOUS INDUSTRIES, 1909.

Class.	Industry.	N.S.W.		Victoria.		Q'land.		S. Aust.		W.A.		Tas.		Cwlth.	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
III.	Bricks, tiles, pottery and earthenware ...	66	8	58	3	8	...	26	...	5	...	6	...	169	11
IV.	Joinery, boxes, cases, etc.	74	...	63	...	21	...	53	...	16	...	8	...	235	...
V.	Engin'ring, ironworks, and foundries ...	190	1	205	...	61	...	101	...	55	...	6	...	618	1
,,	Galvanised iron-working and tinsmithing	98	...	125	5	62	5	104	...	...	...	9	...	398	10
,,	Railway carriages, railway & tramway workshops	97	...	44	...	...	...	27	...	5	...	...	...	173	...
VI.	Biscuits, cakes, etc. ...	117	96	59	20	31	25	7	6	8	4	4	...	226	151
,,	Confectionery ...	66	106	30	58	24	26	26	19	...	4	...	...	146	213
,,	Jams, pickles, sauces, etc.	61	17	31	31	29	...	8	4	2	...	72	40	203	92
,,	Aerated waters, cordials, etc.	47	8	52	1	47	4	4	...	8	...	1	...	159	13
,,	Tobacco, cigars, etc. ...	32	90	28	58	5	8	5	...	2	2	...	...	72	158
VII.	Boots and shoes ...	184	221	289	308	68	71	55	72	8	9	10	6	614	687
,,	Clothing (tailoring and slop)...	80	456	92	345	13	130	28	123	9	58	7	15	229	1,127
,,	Dressmaking and millinery	2	356	12	671	...	37	...	48	...	96	...	49	14	1,257
,,	Hats and caps ...	34	78	36	88	4	11	6	14	...	...	...	...	80	191
,,	Shirts, ties, scarves, etc.	4	132	16	432	9	138	1	87	...	39	...	10	30	838
,,	Woollen, tweed, and cotton mills... ...	14	30	110	89	15	12	3	25	...	...	2	3	144	159
VIII.	Electrotyping, printing and binding... ...	377	110	488	144	208	53	85	18	71	20	34	5	1,263	350
,,	Paper making, paper boxes, etc.	56	108	18	75	3	12	30	92	...	4	...	...	107	291
XI.	Coach & wagon building, etc.	64	1	104	...	27	...	55	...	12	...	11	...	273	1
XIII.	Billiard tables, cabinet making and furniture	72	2	53	1	42	1	36	...	8	...	8	...	219	4

4. **Apprenticeship.**—The apprenticeship systems of the several States may be summarised as follows :—

In New South Wales, no child may be apprenticed until the attainment of the age of fourteen years, in Victoria and Queensland, twelve years. There is no limitation in the case of the other States, nor any regulating Acts except as applying to charity apprentices. The statutes limiting the age at which children may begin to work may be regarded as applicable by way of preventing too early apprenticeship, so also may those directing that education be continued up to a certain age or standard.

Indentures must be entered into specifying the conditions of the employment. Apprenticeships may not exceed seven years in duration, and become inoperative at twenty-one years of age, or in the case of women, on marriage.

The Arbitration Courts and Wages Boards have power to limit the number of apprentices which may be taken into a factory. No general statistics of the number of apprentices in Australia have been collected up to the present time. Other enactments relating to child labour are referred to elsewhere.

§ 6. Amount of Wages Paid and Value of Production.

1. **Introduction.**—The importance of the manufacturing industries of the Commonwealth is indicated by the fact that the total value of the output for 1909 was £107,409,733, of which amount the sum of £65,193,240 represents the value of the raw materials used. The difference between these two amounts, viz., £42,216,493, represents the amount by which the value of the raw materials was enhanced in the process of manufacture. The total amount of salaries and wages paid in factories during 1909 was £21,105,456.

2. **Amounts of Salaries and Wages Paid, 1909.**—The total amounts of salaries and wages paid during the year 1909 in various classes of factories in the Commonwealth (excluding all sums drawn by working proprietors) are shewn in the following table.

It has been found that it is not practicable to shew satisfactorily in this book the rates of wages paid to employees in various classes of manufacturing industries in Australia, owing to the facts—firstly that the rates in many industries vary very considerably in different parts of the country; and secondly that the necessary particulars are not collected by the several States on a uniform basis, while for some of the States the information given is meagre and unsatisfactory.

AMOUNT OF SALARIES AND WAGES PAID IN FACTORIES IN COMMONWEALTH, 1909.*

Class of Industry.	N.S.W.	Vict.	Q'land.	S. Aust.	W. Aust.	Tas.	Cwlth.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ...	270,969	231,801	77,857	74,967	20,467	8,716	684,777
II. Treating oils and fats, animal, vegetable, etc. ...	54,305	60,479	14,593	20,913	4,783	3,330	158,403
III. Processes in stone, clay, glass, etc....	399,533	296,172	37,282	85,257	34,728	18,215	871,187
IV. Working in wood	558,168	441,862	287,069	124,974	554,097	118,997	2,088,167
V. Metal works, machinery, etc.	2,086,717	1,349,190	526,895	680,432	273,229	277,913	5,194,376
VI. Connected with food and drink, etc.	1,014,262	1,026,602	671,583	275,606	167,857	98,482	3,254,392
VII. Clothing and textile fabrics, etc.	1,239,156	1,631,049	230,602	264,245	148,298	85,828	3,599,178
VIII. Books, paper, printing and engraving	732,359	697,083	238,898	152,714	148,582	71,943	2,041,579
IX. Musical instruments, etc. ...	37,897	3,237	...	1,887	...	...	43,021
X. Arms and explosives ...	2,363	20,943	...	...	...	...	23,306
XI. Vehicles and fittings, saddlery and harness, etc. ...	285,935	266,195	83,793	128,592	49,569	25,289	839,373
XII. Ship and boat building and repairing...	222,076	11,393	9,890	14,397	2,223	3,675	264,154
XIII. Furniture, bedding and upholstery	250,319	197,681	64,714	72,784	29,557	18,928	633,983
XIV. Drugs, chemicals, and by-products	91,922	117,797	3,762	43,223	5,230	1,668	263,602
XV. Surgical and other scientific instruments	6,977	3,577	2,339	851	703	...	14,447
XVI. Jewellery, timepieces, and platedware	53,743	69,968	10,085	15,456	3,991	4,154	157,397
XVII. Heat, light, and power ...	283,420	253,937	54,370	58,368	56,022	35,016	741,133
XVIII. Leatherware, n.e.i. ...	21,521	31,234	3,100	1,918	1,137	...	58,910
XIX. Minor wares, n.e.i.... ...	53,483	94,651	7,173	11,607	5,887	1,270	174,071
Total	7,665,125	6,807,851	2,324,005	2,028,691	1,506,360	773,424	21,105,456

* Excluding all amounts drawn by working proprietors.

The maximum amount of salaries and wages paid in any particular class was in Class V., the amount being £5,194,376, or 24.61 per cent. on the total amount; the minimum amount was in Class XV., £14,447, or 0.07 per cent. on the total amount. The State in which the largest amount was paid was New South Wales, where the amount paid was nearly ten times as much as was paid in Tasmania. The following statement shews the average amount paid per employee in each State respectively; the figures are exclusive of working proprietors :—

AVERAGE AMOUNT OF SALARIES AND WAGES PAID PER EMPLOYEE, 1909.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
Amount paid ... £	87.27	73.57	82.09	83.08	122.21	87.78	83.01

In comparing the figures in the above table regard should be paid to the nature of certain industries which are carried on to a greater extent in some States than in others (see § 2 hereof). In Victoria, for instance, where the average is lowest, there are a large

number of factories and hands employed in Class VII., and in that class wages are low, a great many women and children being employed. The position occupied by Western Australia is no doubt partly due to the higher cost of living in that State.

From information now collected for the first time, it is estimated that of the total amounts paid in salaries and wages in each State during 1909—the males in New South Wales factories received £6,823,732, or 89.02 per cent., and the females £841,393, or 10.98 per cent.; while in Victoria the former were paid £5,607,703, or 82.37 per cent., and the latter £1,200,148, or 17.63 per cent. Similar information for the other States is not available.

3. **Value of Raw Materials used in Factories, 1909.**—The total value of raw materials worked up (*i.e.*, exclusive of fuel, lubricants, etc.) in factories in the Commonwealth during 1909, was £65,193,240, which represents 60.70 per cent. of the total value of the finished products. (See next paragraph hereof.) The following table shews the value of the raw materials worked up in various factories in each State during the year 1909:—

VALUE OF RAW MATERIALS WORKED UP IN FACTORIES IN COMMONWEALTH. 1909.

Class of Industry.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Cwlth.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ...	3,547,598	1,908,334	1,263,230	505,289	146,338	67,950	7,438,739
II. Treating oils and fats, animal, vegetable, etc. ...	506,981	357,719	44,992	101,968	54,414	19,460	1,085,534
III. Processes in stone, clay, glass, etc.	206,914	149,300	6,299	26,025	8,101	7,400	404,039
IV. Working in wood... ...	1,288,739	662,416	430,449	597,848	75,707	31,880	3,087,039
V. Metal wks., machinery, etc.	4,980,272	1,824,657	789,987	1,196,019	246,590	1,529,079	10,566,604
VI. Connected with food and drink, etc.	12,005,543	8,588,744	4,330,405	2,386,409	568,154	985,140	28,864,395
VII. Clothing and textile fabrics, etc.	2,162,124	3,336,228	447,741	478,693	214,566	170,730	6,810,082
VIII. Books, paper, printing, and engraving	639,910	687,916	108,934	140,238	72,752	68,400	1,718,150
IX. Musical instruments, etc.	66,890	1,688	...	1,783	...	...	70,361
X. Arms and explosives ...	7,450	61,598	...	...	...	...	69,048
XI. Vehicles and fittings, saddlery and harness, etc....	342,265	322,615	91,500	190,639	50,899	33,080	1,030,998
XII. Ship and boat building and repairing	126,598	6,529	5,319	8,723	2,875	3,810	153,854
XIII. Furniture, bedding, and upholstery	369,130	328,646	68,015	62,529	36,356	26,850	891,526
XIV. Drugs, chemicals, and by-products	403,539	597,720	11,176	228,231	21,555	4,660	1,266,881
XV. Surgical and other scientific instruments ...	6,155	2,910	2,536	500	94	...	12,195
XVI. Jewellery, timepieces, and plated ware	69,666	132,490	17,742	19,292	5,752	8,440	253,382
XVII. Heat, light, and power ...	369,221	247,553	22,141	42,222	15,120	19,560	715,817
XVIII. Leatherware, n.e.i. ...	82,783	146,420	8,300	3,059	2,770	...	243,332
XIX. Minor wares, n.e.i. ...	132,708	343,047	9,429	14,992	7,168	3,920	511,264
Total	27,314,486	19,706,530	7,658,195	6,004,459	1,529,211	2,980,359	65,193,240

The class in which the maximum value of raw materials was used was Class VI., "Connected with Food and Drink, etc.," the value being £28,864,395, or nearly three times the value of any other class. The next important class in order of value was Class V., "Metal Works, Machinery, etc.," in which raw materials to the value of £10,566,604 were used. The class in which the minimum value appears is Class XV., "Surgical and other Scientific Instruments," the value being only £12,195.

4. **Total Value of Output of Manufacturing Industries, 1909.**—The value of the output of new goods manufactured and repairs effected in factories of various classes in each State during the year 1909 is shewn in the following table. The figures given represent not only the increased value due to the process of manufacture, but also

include the value of the raw materials used. The difference between the value of the materials used and the total output (see paragraph 5 hereof) is the real value of production from manufactories.

TOTAL VALUE OF OUTPUT OF FACTORIES IN COMMONWEALTH, 1909.

Class of Industry.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	Cwth.
	£	£		£	£	£	£
I. Treating raw material, product of agricultural & pastoral pursuits, etc.	4,230,922	2,402,171	1,698,794	638,345	201,329	87,350	9,258,911
II. Treating oils and fats, animal, vegetable, etc. ...	754,982	522,282	93,674	167,022	68,443	28,660	1,635,063
III. Processes in stone, clay, glass, etc.	1,003,226	731,467	79,879	186,733	72,990	44,310	2,118,605
IV. Working in wood ...	2,201,867	1,361,212	940,364	797,750	799,326	243,500	6,344,019
V. Metal works, machinery, etc.	8,756,007	4,044,353	1,552,564	2,522,064	552,822	2,264,735	19,692,545
VI. Connected with food and drink, etc.	15,048,893	11,340,911	6,394,794	3,185,970	1,065,189	1,301,340	38,337,097
VII. Clothing and textile fabrics, etc.	4,140,266	5,983,708	817,675	900,104	423,076	307,480	12,572,309
VIII. Books, paper, printing, and engraving... ...	1,861,917	2,037,384	538,779	338,232	315,995	207,300	5,299,607
IX. Musical instruments, etc.	129,898	6,920	...	4,486	...	...	141,304
X. Arms and explosives ...	10,287	112,074	...	...	...	...	122,361
XI. Vehicles and fittings, saddlery and harness, etc.	794,487	763,979	228,352	393,157	119,319	76,680	2,375,974
XII. Ship and boat building and repairing	391,437	26,375	18,644	27,732	5,868	9,590	479,646
XIII. Furniture, bedding, and upholstery	740,502	630,213	161,718	174,426	74,602	54,850	1,836,311
XIV. Drugs, chemicals, and by-products	733,685	961,657	20,640	328,525	34,970	10,270	2,089,747
XV. Surgical and other scientific instruments ...	22,609	9,292	6,772	2,050	1,242	...	41,965
XVI. Jewellery, timepieces, and platedware	157,762	266,706	33,478	47,637	12,811	16,410	534,804
XVII. Heat, light, and power ...	1,614,430	992,737	206,253	175,455	241,453	131,700	3,362,428
XVIII. Leatherware, n.e.i. ...	126,545	202,072	13,561	6,035	4,677	...	352,890
XIX. Minor wares, n.e.i. ...	240,967	502,722	17,754	31,982	14,492	6,280	814,147
Total	42,960,689	32,898,235	12,823,695	9,928,105	4,008,604	4,790,405	107 409 733

It may be seen that the State of New South Wales far outstrips the other States in the total value of the output of her factories, the value being £42,960,689, or 40.00 per cent. on the total value for the Commonwealth. The next State in order of value is Victoria, which produced 30.63 per cent.; the value of the output of Queensland was 11.94 per cent.; of South Australia 9.24 per cent.; of Western Australia 3.73 per cent.; and of Tasmania 4.46 per cent. The two most important classes in order of value of output (Classes VI. and V.) are the same as in order of value of raw materials used. As regards output the next class is Class VII., and as regards raw materials used Class I. The following statement shews the value of output per head of mean population during 1909:—

VALUE OF OUTPUT OF FACTORIES PER HEAD OF MEAN POPULATION, 1909.

Particulars.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	Cwlth.
Amount per head ... £	26.75	25.61	22.69	24.17	14.79	26.01	24.85

5. **Value of Production of Manufacturing Industries, 1909.**—The difference between the figures given in paragraph 4 and the corresponding figures in paragraph 3 hereof represents the amount added to the value of the raw materials by the process of manufacture. This is the real measure of the value of production from manufacturing industries. The following table shews the value added in this manner in each State during the year 1909 for the various classes of factories:—

VALUE OF PRODUCTION FROM MANUFACTURING INDUSTRIES IN COMMONWEALTH, 1909.

Class of Industry.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	Cwlth.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ...	683,324	493,837	435,564	133,056	54,991	19,400	1,820,172
II. Treating oils and fats, animal, vegetable, etc. ...	248,001	164,563	48,682	65,054	14,029	9,200	549,529
III. Processes in stone, clay, glass, etc.	796,312	582,167	73,580	160,708	64,889	36,910	1,714,566
IV. Working in wood... ...	913,128	698,796	509,915	199,902	723,619	211,620	3,256,980
V. Metal works, machinery, etc.	3,775,735	2,219,696	762,577	1,326,045	306,232	735,656	9,125,941
VI. Connected with food and drink, etc.	3,043,350	2,752,167	2,064,389	799,561	497,035	316,200	9,472,702
VII. Clothing and textile fabrics, etc.	1,978,142	2,647,480	369,934	421,411	208,510	136,750	5,762,227
VIII. Books, paper, printing, and engraving	1,222,007	1,349,468	429,845	197,994	243,243	138,900	3,581,457
IX. Musical instruments, etc.	63,008	5,232	...	2,703	...	...	70,943
X. Arms and explosives ...	2,837	50,476	...	...	...	...	53,313
XI. Vehicles and fittings, saddlery and harness, etc....	452,222	441,364	136,852	202,518	68,420	43,600	1,344,976
XII. Ship and boat building and repairing	264,889	19,846	13,325	19,009	2,993	5,780	325,792
XIII. Furniture, bedding, and upholstery	371,372	301,567	93,703	111,897	38,246	28,000	944,785
XIV. Drugs, chemicals, and by-products	330,146	363,937	9,464	100,294	13,415	5,610	822,866
XV. Surgical and other scientific instruments ...	16,454	6,382	4,236	1,550	1,148	...	29,770
XVI. Jewellery, timepieces, and platedware	88,096	134,216	15,736	28,345	7,059	7,970	281,422
XVII. Heat, light, and power ...	1,245,209	745,184	184,112	133,633	226,333	112,140	2,646,611
XVIII. Leatherware, n.e.i. ...	43,762	55,652	5,261	2,976	1,907	...	109,558
XIX. Minor wares, n.e.i. ...	108,259	159,675	8,325	16,990	7,324	2,310	302,883
Total	15,646,203	13,191,705	5,165,500	3,923,646	2,479,393	1,810,046	42,216,493

It may be seen that as regards the amount of the value added the classes are approximately in the same order as in the case of value of output, and that the States are also in the same order, except that the positions of Western Australia and Tasmania are reversed. The value added to raw material by process of manufacture per head of mean population is shewn in the following statement :—

VALUE OF PRODUCTION OF MANUFACTURING INDUSTRIES PER HEAD OF MEAN POPULATION, 1909.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Cwlth.
Value ... £	9.74	10.27	9.14	9.55	9.15	9.83	9.77

It may thus be seen that the positions of the two leading States, New South Wales and Victoria, as also of that of Queensland and Western Australia, in regard to total value of output of factories per head of mean population, are reversed in regard to value added per head. The other two States retain their relative positions.

As the total value of the output for the Commonwealth was estimated at £107,409,733, there remained, after payment of £65,193,240, the value of the raw materials used, of £21,105,456 for salaries and wages, and of £2,227,505 for fuel, the sum of £18,883,532 to provide for all other expenditure and profits. The following table gives corresponding

particulars for each State, expressed absolutely and as percentages of the total value of the output:—

VALUE OF OUTPUT AND COST OF PRODUCTION IN COMMONWEALTH FACTORIES, 1909.

State.	Raw Materials Used.	Fuel.	Salaries and Wages.	All other Expenditure Interest, and Profits.	Total Value of Output.
	VALUE AND COST, ETC.				
	£	£	£	£	£
New South Wales	27,314,486	940,840	7,665,125	7,040,238	42,960,689
Victoria	19,706,530	566,768	6,807,851	5,817,086	32,898,235
Queensland	7,658,195	194,776	2,324,005	2,646,719	12,823,695
South Australia	6,004,459	269,646	2,028,691	1,625,309	9,928,105
Western Australia	1,529,211	140,111	1,506,360	832,922	4,008,604
Tasmania	2,980,359	115,364	773,424	921,258	4,790,405
Commonwealth	65,193,240	2,227,505	21,105,456	18,883,532	107409,733
	PERCENTAGE OF COSTS, ETC., ON TOTAL VALUE.				
	%	%	%	%	%
New South Wales	63.58	2.19	17.84	16.39	100.00
Victoria	59.90	1.72	20.70	17.68	100.00
Queensland	59.72	1.52	18.12	20.64	100.00
South Australia	60.48	2.72	20.43	16.37	100.00
Western Australia	38.15	3.49	37.58	20.78	100.00
Tasmania	62.22	2.41	16.14	19.23	100.00
Commonwealth	60.70	2.07	19.65	17.58	100.00

For every hundred pounds worth of goods manufactured in each State and in the Commonwealth the percentages given in the above table represent the proportions of the various elements included in the price of the goods as they left the factories.

§ 7. Land, Buildings, Plant and Machinery.

1. **General.**—As an indication of the permanent character and stability of the industries which have been established in the Commonwealth, it may be noted that the values of both land and buildings and of plant and machinery used in the factories are rapidly increasing. Thus, for the whole Commonwealth the total value of land and buildings and plant and machinery has increased from 1905 to 1909 by £8,557,439, from £45,997,398 to £54,554,837, that is, at the rate of £2,139,360 per annum.

The following statement shews for the year 1909 the values of land and buildings and of plant and machinery used in connection with manufacturing industries in each State:—

VALUE OF LAND, BUILDINGS, PLANT AND MACHINERY IN CONNECTION WITH MANUFACTURING INDUSTRIES, 1909.

Value of—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Cwlth.
	£	£	£	£	£	£	£
Land and buildings ...	11,014,362	8,642,344	2,888,923	2,432,655	1,522,692	1,176,619	27,677,595
Plant and machinery ...	10,330,724	7,140,304	4,457,314	2,185,203	1,728,207	1,035,490	26,877,242
Total	21,345,086	15,782,648	7,346,237	4,617,858	3,250,899	2,212,109	54,554,837

It may be seen from the above table that the total capital invested in land, buildings, plant, and machinery in the manufacturing industry in the Commonwealth during the year 1909 was approximately £54,554,837, or £12.62 per head of mean population; of that sum £27,677,595 was invested in land and buildings occupied as manufactories, the remaining £26,877,242 being the value of the plant and machinery used in connection therewith.

2. **Value of Land and Buildings.**—The value of the land and buildings occupied in connection with manufacturing industries may be conveniently classified according to the nature of the industry conducted therein.

(i.) *Total Value in Commonwealth, 1905 to 1909.* The following table shews for the whole Commonwealth the approximate values of land and buildings occupied in connection with manufacturing industries of various classes during each year from 1905 to 1909 inclusive:—

VALUE OF LAND AND BUILDINGS OCCUPIED AS FACTORIES IN COMMONWEALTH, 1905 TO 1909.

Class of Industry.	1905.	1906.	1907.	1908.	1909.
	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ...	791,535	777,871	781,733	847,113	869,488
II. Treating oils & fats, animal, vegetable, etc.	375,097	363,622	343,424	359,624	376,681
III. Processes in stone, clay, glass, etc. ...	741,110	728,995	820,332	937,753	956,733
IV. Working in wood	1,132,615	1,219,155	1,090,551	1,195,581	1,285,267
V. Metal works, machinery, etc.	3,231,594	3,313,200	3,709,314	4,378,755	4,415,525
VI. Connected with food and drink, etc. ...	6,956,539	6,638,474	6,708,611	7,161,845	7,191,976
VII. Clothing and textile fabrics, etc.... ...	2,931,080	2,919,301	3,396,599	3,377,905	3,809,148
VIII. Books, paper, printing, and engraving ...	2,155,476	2,134,021	2,357,799	2,483,693	2,642,029
IX. Musical instruments, etc.	26,041	27,741	27,405	31,054	33,314
X. Arms and explosives	29,233	30,314	31,152	34,586	33,016
XI. Vehicles & fittings, saddlery & harness, etc.	980,989	951,288	1,079,859	1,172,556	1,186,750
XII. Ship and boat building and repairing ...	1,102,918	1,111,752	991,907	988,141	1,033,513
XIII. Furniture, bedding, and upholstery ...	652,976	618,422	633,237	666,289	697,273
XIV. Drugs, chemicals, and by-products ...	307,593	335,393	444,060	531,765	543,507
XV. Surgical and other scientific instruments	32,736	37,197	31,779	33,054	56,378
XVI. Jewellery, timepieces, and platedware ...	140,535	159,356	204,734	226,352	232,483
XVII. Heat, light, and power	1,511,504	1,510,520	1,855,438	1,928,734	2,026,611
XVIII. Leatherware, n.e.i.	61,472	60,365	57,043	91,036	83,578
XIX. Minor wares, n.e.i.	139,666	143,204	193,797	218,840	210,325
Total	23,300,709	23,080,191	24,758,774	26,664,676	27,677,595

The figures in the above table for the years 1905 and 1906 are subject to the limitations that the actual returns for these years for the States of New South Wales and South Australia are not available. In order to present an approximate total for the Commonwealth, however, 1901 figures for New South Wales, and 1907 figures for South Australia are included for the years specified. It may be seen that the total net increase was £4,376,886, or an annual average of £1,094,221. In two classes, viz., Classes II. and XII., there were comparatively small decreases, the total of which amounted to £73,821. The largest increases were in Classes V. and VII., and amounted to 1,183,931 and £878,068 respectively.

(ii.) *Value in each State, 1909.* The following table gives similar information for each State up to the 31st December, 1909 :—

VALUE OF LAND AND BUILDINGS OCCUPIED AS FACTORIES IN EACH STATE, 1909.

Class of Industry.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	Cwlth.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ...	348,114	342,488	49,471	86,293	28,040	15,082	869,488
II. Treating oils and fats, animal, vegetable, etc. ...	166,072	110,874	28,385	55,680	5,670	4,000	370,681
III. Processes in stone, clay, glass, etc.	480,668	323,029	31,177	61,571	39,418	20,870	956,733
IV. Working in wood	544,166	265,856	147,877	107,879	152,240	67,249	1,285,267
V. Metal works, machinery, etc.	1,938,683	1,035,526	481,465	430,134	405,935	123,782	4,415,525
VI. Connected with food and drink, etc.	2,359,155	2,104,402	1,151,112	653,293	378,173	545,841	7,191,976
VII. Clothing and textile fabrics, etc.	1,533,557	1,446,255	221,292	349,950	131,131	126,963	3,809,148
VIII. Books, paper, printing and engraving	1,033,002	788,447	381,748	249,904	152,078	36,850	2,642,029
IX. Musical instruments, etc.	24,906	5,308	...	3,100	...	...	33,314
X. Arms and explosives ...	2,487	30,529	...	...	...	...	33,016
XI. Vehicles and fittings, saddlery and harness, etc....	420,160	360,469	123,108	170,056	64,710	48,247	1,186,750
XII. Ship and boat building and repairing	590,631	417,246	8,876	11,000	2,860	2,900	1,033,513
XIII. Furniture, bedding and upholstery	254,219	243,698	73,403	69,633	36,245	20,075	697,273
XIV. Drugs, chemicals, and by-products	165,985	266,843	10,250	83,717	16,537	175	543,507
XV. Surgical and other scientific instruments ...	27,909	8,257	11,752	4,270	4,190	...	56,378
XVI. Jewellery, timepieces, and platedware	66,186	97,615	22,312	23,540	3,620	19,210	232,483
XVII. Heat, light, and power ...	934,044	674,818	141,638	41,760	91,726	142,625	2,026,611
XVIII. Leatherware, n.e.i. ...	32,286	41,717	675	6,620	2,280	...	83,578
XIX. Minor wares, n.e.i. ...	92,132	78,967	4,382	24,255	7,839	2,750	210,325
Total	11,014,362	8,642,344	2,888,923	2,432,655	1,522,692	1,176,619	27,677,595

The maximum value for the Commonwealth of land and buildings in any particular class was in Class VI., amounting to £7,191,976, or 25.98 per cent. on the total value. The next classes in importance were Classes V., VII., VIII., and XVII., in which the values were £4,415,525, £3,809,148, £2,642,029, and £2,026,611 respectively. The sum of the values for the five classes mentioned amounted to £20,085,289, or 72.57 per cent. on the total value for all classes.

(iii.) *Total Value in each State, 1904 to 1909.* The following table shews the total value, so far as returns are available, of land and buildings occupied as manufactories in each State at the end of each year from 1904 to 1909 inclusive:—

TOTAL VALUE OF LAND AND BUILDINGS OCCUPIED AS FACTORIES IN EACH STATE, 1904 to 1909.

Year.	N.S.W.	Victoria.	Queensland.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
1904	*8,029,890	7,641,051	2,699,191	2,140,516†	1,731,233	1,000,481	23,242,362
1905	*8,029,890	7,771,238	2,709,951	2,140,516†	1,685,597	963,517	23,300,709
1906	*8,029,890	8,062,110	2,405,559	2,140,516†	1,775,279	666,837	23,080,191
1907	9,508,259	8,376,642	2,261,539	2,140,516	1,637,207	834,611	24,758,774
1908	10,390,260	8,589,027	2,763,085	2,311,650	1,565,756	1,044,898	26,664,676
1909	11,014,362	8,642,344	2,888,923	2,432,655	1,522,692	1,176,619	27,677,595

* 1901 figures. † 1907 figures, those for previous years not being available.

It may be seen that, so far as returns are available, there has been a general though irregular increase in all the States with the exception of Western Australia, which State shews a decided fall; this is probably due to a general reduction in values of real estate in that State during the past few years. The irregularities in some of the States are probably due partly to the returns having been made on different bases for the succeeding years in carrying into effect the resolutions passed at the Conferences of Statisticians (see § 1. 2 hereof).

3. **Value of Plant and Machinery.**—The following table shews for the whole Commonwealth the approximate value of plant and machinery used in connection with factories at the end of each year from 1905 to 1909 inclusive. The figures, however, are subject to certain limitations, inasmuch as returns for South Australia for the years 1905 and 1906 are not available; South Australian figures for 1907 have therefore been taken for these years.

VALUE OF PLANT AND MACHINERY USED IN FACTORIES IN COMMONWEALTH, 1905 TO 1909.

Class of Industry.	1905.	1906.	1907.	1908.	1909.
	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ...	578,382	618,891	644,597	671,015	726,786
II. Treating oils & fats, animal, vegetable, etc.	327,182	328,484	331,595	349,997	349,479
III Processes in stone, clay, glass, etc. ...	734,285	745,504	752,084	833,809	901,193
IV. Working in wood...	1,490,402	1,422,545	1,506,933	1,583,496	1,623,297
V. Metal works, machinery, etc.	3,657,936	3,749,781	4,237,810	4,633,656	4,941,632
VI. Connected with food and drink, etc. ...	7,177,535	7,436,991	7,340,941	7,744,682	7,772,770
VII. Clothing and textile fabrics, etc. ...	962,164	1,177,456	1,132,083	1,158,698	1,280,102
VIII. Books, paper, printing, and engraving ...	1,824,315	1,889,705	1,993,135	2,091,168	2,207,930
IX. Musical instruments, etc.	6,750	6,327	7,829	9,124	11,263
X. Arms and explosives	44,037	44,476	45,613	46,113	45,940
XI. Vehicles & fittings, saddlery & harness, etc.	161,479	194,136	195,271	204,138	220,746
XII. Ship and boat building, and repairing ...	368,340	353,371	352,486	432,803	434,905
XIII. Furniture, bedding, and upholstery ...	94,768	97,392	106,613	117,451	126,000
XIV. Drugs, chemicals, and by-products ...	282,293	306,285	332,349	398,028	435,019
XV. Surgical and other scientific instruments	5,013	7,329	6,340	8,144	9,215
XVI. Jewellery, timepieces, and platedware ...	32,972	38,796	45,927	46,160	43,980
XVII. Heat, light, and power	4,871,562	5,242,509	5,555,544	5,481,759	5,611,333
XVIII. Leatherware, n.e.i.	11,867	15,489	16,523	18,989	19,555
XIX. Minor wares, n.e.i.	65,407	68,831	82,435	98,503	116,097
Total	22,696,689	23,744,298	24,686,108	25,927,763	26,877,242

It may be seen that during the period in question there has been a steady and substantial net increase amounting in all to £4,180,553, or an annual average of £1,045,138. The increase has occurred in all classes of industry, the largest increase being in Class V., "Metal Works, Machinery, etc.," amounting to £1,283,696, while the next largest was in Class XVII., "Heat, Light, and Power," and amounted to £739,771.

(i.) *Total Value in each State, 1904 to 1909.* The classified figures in the preceding table for the whole Commonwealth are shewn below for each State. It will be seen that the increase in value referred to is general throughout the States, with the exception of Western Australia, where there is a small decrease. New South Wales shews by far the largest increase, viz., £2,681,821; while Victoria comes next with £1,113,170.

VALUE OF PLANT AND MACHINERY IN FACTORIES, 1904 to 1909.

Year.	N.S.W.	Victoria.	Queensland.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
1904	7,648,903	6,027,134	4,200,303	1,900,744*	1,776,481	753,967	22,307,532
1905	8,031,948	6,187,919	3,988,056	1,900,744*	1,834,098	753,924	22,696,689
1906	8,407,337	6,450,355	4,282,502	1,900,744*	1,861,477	841,883	23,744,298
1907	9,155,772	6,771,458	3,989,679	1,900,744	1,893,351	975,104	24,686,108
1908	9,718,842	6,957,606	4,470,145	2,064,097	1,744,652	972,421	25,927,763
1909	10,330,724	7,140,304	4,457,314	2,185,203	1,728,207	1,035,490	26,877,242

* Figures for 1907, previous years not being available.

(ii.) *Classified Value in each State, 1909.* The following table shews the value of plant and machinery used in factories in each State during the year 1909, classified according to the nature of the industry in which used:—

VALUE OF PLANT AND MACHINERY USED IN FACTORIES IN EACH STATE, 1909.

Class of Industry.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Cwealth.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ...	282,339	248,053	94,980	67,161	21,393	12,860	726,786
II. Treating oils and fats, animal, vegetable, etc. ...	165,071	117,542	40,102	19,764	3,200	3,800	349,479
III. Processes in stone, clay, glass, etc.	534,216	226,169	44,577	52,587	32,488	11,156	901,193
IV. Working in wood	497,215	258,860	333,296	53,670	350,405	129,851	1,623,297
V. Metal wks., machinery, etc.	2,309,064	989,296	530,237	407,391	306,946	398,698	4,941,632
VI. Connected with food and drink, etc.	2,714,561	1,543,172	2,565,032	542,279	279,315	128,411	7,772,770
VII. Clothing and textile fabrics, etc.	378,979	660,887	99,530	71,979	22,823	45,904	1,280,102
VIII. Books, paper, printing, and engraving	839,097	749,583	214,048	174,370	169,895	60,937	2,207,930
IX. Musical instruments, etc.	9,250	1,463	...	550	...	...	11,263
X. Arms and explosives ...	684	45,256	...	...	...	...	45,940
XI. Vehicles and fittings, saddlery and harness, etc.	70,455	69,030	25,970	36,665	10,996	7,630	220,746
XII. Ship and boat building and repairing	355,088	59,105	11,410	6,420	1,020	1,862	434,905
XIII. Furniture, bedding, and upholstery	37,382	43,585	17,944	17,543	5,646	3,900	126,000
XIV. Drugs, chemicals, and by-products	165,329	164,283	3,950	91,286	9,321	850	435,019
XV. Surgical and other scientific instruments ...	3,931	2,001	1,288	900	1,095	...	9,215
XVI. Jewellery, timepieces, and platedware	16,513	19,159	2,809	3,814	900	785	43,980
XVII. Heat, light, and power ...	1,895,991	1,869,320	470,479	635,399	511,308	228,836	5,611,333
XVIII. Leatherware, n.e.i. ...	6,604	11,560	711	380	300	...	19,555
XIX. Minor wares, n.e.i. ...	48,955	61,980	951	3,045	1,156	10	116,097
Total	10,330,724	7,140,304	4,457,314	2,185,203	1,728,207	1,035,490	26,877,242

The greatest value for any particular class of industry is for Class VI., "Connected with Food and Drink, etc.," and amounts to £7,772,770, or 28.92 per cent. on the total value for all classes. The next greatest value is for Class XVII., "Heat, Light, and Power," and amounts to £5,611,333, or 20.88 per cent. on the total. The next greatest is for Class V., "Metal Works, Machinery, etc.," amounting to £4,941,632, or 18.38 per cent. on the total value. The total for the three classes just specified amounts to £18,325,735, or 68.18 per cent. on the total value for all classes.

§ 8. Individual Industries.

1. **General.**—The preceding remarks and tables furnish a general view of the recent development of particular classes of industries in Australia treated under the nineteen categories referred to in § 1. 3 hereof. In order to made the information complete, it must necessarily be supplemented by details exhibiting the development of individual industries. This alone will furnish adequate information as to the channels into which the main efforts of Australian manufacture flow. While it is not possible, within the limits of this article, to give anything like a detailed account of the manufacturing industries of the Commonwealth, it is proposed to deal herein with such particular industries as are of special importance by reason either of the number of persons employed, the number of factories, the amount of capital invested therein, the value of the production, or other features of special interest. In cases where there are only either one or two establishments of a particular class in any State, returns relative to output are not published, in order to avoid disclosing information as to the operations of individual factories.

2. **Tanning Industry.**—In Class I. (see § 1. 3 hereof) the most important industry is tanning. Until recent years the production of tanneries in Australia was confined to the coarser class of leathers, but lately the tanning of the finer leathers has been undertaken with satisfactory results. The position of the industry in the several States in 1909 was as follows :—

TANNERIES, 1909.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
Number of factories	79	58	17	13	4	8	179
„ employees	933	1,502	171	237	69	68	2,980
Actual horse-power of engines employed ...	942	1,361	156	220	95	72	2,846
Approx. value of lands and buildings £	99,296	119,420	17,123	26,757	10,020	9,282	281,898
Approx. value of plant and machinery £	76,781	90,833	10,193	12,046	5,508	7,600	202,961
Total amount of wages paid during year £	84,021	129,902	15,468	24,151	7,504	5,751	266,797
Value of raw material worked up ... £	710,348	826,821	110,954	113,497	34,129	36,560	1,832,309
Total value of output ... ... £	867,344	1,059,120	142,510	156,827	47,519	46,870	2,320,190
Value added in process of manufacture £	156,996	232,299	31,556	43,330	13,390	10,310	487,881

(i.) *Progress of Tanning, etc., Industries, 1906 to 1909.* For years prior to 1908 returns for tanneries are not generally available separately, but are grouped with the wool-scouring and fellmongering industries. The development of the tanning, fellmongering, and wool-scouring industries during the period 1906 to 1909 is shewn in the following table, from which it will be seen that though the number of factories is almost stationary, the number of employees shews a satisfactory increase, amounting to 11.40 per cent. during the period under consideration.

DEVELOPMENT OF TANNING, ETC., INDUSTRIES, 1906 to 1909.

State.	Number of Factories.				Number of Employees.				Approximate Value of Plant and Machinery.			
	1906.	1907.	1908.	1909.	1906.	1907.	1908.	1909.	1906.	1907.	1908.	1909.
									£	£	£	£
New South Wales	154	152	146	147	2,427	2,507	2,396	2,544	172,553	159,850	167,071	188,820
Victoria	84	90	92	93	1,657	1,893	2,001	1,999	114,951	124,064	133,376	142,429
Queensland ...	40	37	39	36	513	615	685	667	84,750	81,225	91,492	88,337
South Australia ...	14	12	14	15	344	294	341	288	*	9,197	11,991	14,161
Western Australia	2	3	3	4	61	64	69	69	5,500	5,500	5,640	5,508
Tasmania ...	3	6	9	8	56	67	78	68	6,600	6,550	7,476	7,600
Commonwealth ...	297	300	303	303	5,058	5,440	5,570	5,635	384,354†	386,386	417,046	446,855

* No information available. † Exclusive of South Australia.

(ii.) *Production of Tanneries, 1909.* The quantity of raw materials used and the quantity and value of leather produced in tanneries in each State during the year 1909 are shewn in the following table :—

RAW MATERIALS USED AND LEATHER PRODUCED IN TANNERIES, 1909.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
RAW MATERIALS USED.							
Hides ... No. (,000 omitted)	455	496	71	84	25	17	1,148
Pelts treated No. „	4,793	705	45	*	...	*	*
Bark ... ... Tons	9,380	10,018	1,763	1,682	689	519	24,051
LEATHER AND BASILS PRODUCED.							
LEATHER—							
Quantity lbs. (,000 omitted)	13,038	20,129	2,250	2,511	993	893	39,814†
Value ... ... £	640,675	990,000	134,670	147,607	47,126	37,360	1,997,438†
BASILS—							
Quantity lbs. (,000 omitted)	3,182	643	*	98	...	*	*
Value ... ... £	135,210	28,000	*	*	...	*	*

* Not available. † Incomplete.

3. **Soap and Candle Factories.**—In Class II. (See § 1. 3 hereof) the manufactures of soap and candles are the most important industries. These two manufactures are frequently carried on in the same establishments, so that separate returns cannot be obtained; it may, however, be said generally that the manufacture of soap is the more important of the two. The following table gives particulars of soap and candle factories in each State during the year 1909:—

SOAP AND CANDLE FACTORIES, 1909.

Items.		N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	Cwlth.
Number of factories		26	17	18	7	3	2	73
" employees		571	563	174	185	50	39	1,582
Actual horse-power of engines employed ...		364	276	144	93	25	18	920
Approximate value of land and buildings	£	116,718	99,594	28,385	41,945	5,670	4,000	296,312
" " plant and machinery	£	127,437	111,252	40,102	14,224	3,200	3,800	300,015
Total amount of wages paid during year	£	42,079	56,382	14,593	18,792	4,783	3,330	139,959
Value of raw material worked up ...	£	288,125	329,513	44,992	95,759	54,414	*	†812,803
Total value of output	£	472,628	485,954	93,674	155,124	68,443	*	†1,275,823
Value added in process of manufacture	£	184,503	156,441	48,682	59,365	14,029	*	†463,020

* As there are only two soap and candle factories in this State, returns relative to output, etc. are not disclosed. † Exclusive of Tasmania.

(i.) *Development of Soap and Candle Factories, 1906 to 1909.* The following table gives particulars for the last four years regarding the numbers of factories and employees and the value of plant and machinery in these industries in each State:—

DEVELOPMENT OF SOAP AND CANDLE FACTORIES, 1906 to 1909.

State.	Number of Factories.				Average Number of Employees.				Approximate Value of Plant and Machinery.			
	1906.	1907.	1908.	1909.	1906.	1907.	1908.	1909.	1906.	1907.	1908.	1909.
									£	£	£	£
New South Wales	41	34	29	26	602	553	553	571	121,313	127,311	135,786	127,437
Victoria	15	15	17	17	523	510	535	563	104,244	106,326	109,768	111,252
Queensland ...	14	15	16	18	142	142	159	174	33,599	35,562	35,794	40,102
South Australia...	8	7	6	7	207	166	164	185	*	11,896	12,484	14,224
Western Australia	3	3	3	3	61	57	50	50	8,216	6,938	4,910	3,200
Tasmania ...	2	2	2	2	35	35	35	39	4,300	3,600	4,000	3,800
Commonwealth	83	76	73	73	1,570	1,463	1,496	1,582	†271,672	291,633	302,742	300,015

* Information not available. † Exclusive of South Australia.

(ii.) *Production of Soap and Candles, 1906 to 1909.* The subjoined statement shews that there has been a considerable increase in the output of both of these products. As regards the production of soap an increase is shewn in all the States with the exception of New South Wales, which shews a slight decrease. The returns as to the production of candles are incomplete for 1906 and 1907; it may be seen, however, that there has been a considerable increase in New South Wales during the four years, and that the production in the whole of the Commonwealth during 1909 shews an increase of 1,765,051 lbs. over that for 1908.

PRODUCTION OF SOAP AND CANDLES, 1906 to 1909.

State.	Soap.				Candles.			
	1906.	1907.	1908.	1909.	1906.	1907.	1908.	1909.
	cwt.	cwt.	cwt.	cwt.	lbs.	lbs.	lbs.	lbs.
New South Wales ...	221,834	225,217	217,321	206,678	4,799,898	5,656,354	5,566,776	6,922,488
Victoria	154,570	153,478	162,757	176,162	4,826,528	5,341,056	4,222,960	5,091,520
Queensland ...	64,130	59,900	67,755	73,446	*	*	1,023,160	557,312
South Australia	*	56,745	61,614	66,043	*	1,975,075	1,806,725	1,678,900
Western Australia ...	26,960	31,774	29,767	35,419	1,567,768	1,300,625	1,259,214	1,309,066
Tasmania	7,360	9,679	10,500	9,900	703,360	672,000	448,000	537,600
Commonwealth ...	†474,854	536,793	549,714	567,648	†11,897,554	14,945,110 †	14,331,835	16,096,886

* Not available. † Incomplete.

(iii.) *Raw Material Used, 1909.* The following statement shews the quantity of certain raw materials used in soap and candle factories in each State during the year 1909 :—

RAW MATERIAL USED IN SOAP AND CANDLE FACTORIES, 1909.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Cwlth.
Tallow ... ... cwt.	104,633	140,195	30,328	43,605	13,830	14,000	346,591
Alkali ... ... lbs.	50,152	33,278	10,654	7,841	5,300	...	107,225

4. **Saw Mills, etc.**—The most important industry in Class IV. is that of saw-milling. As separate particulars of forest saw mills are not available for some of the States, for the sake of comparison, both forest and other saw mills as well as joinery, moulding and box factories have had to be combined in the following table.

SAW MILLS, FOREST AND OTHER, 1909.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Cwlth.
Number of factories	528	273	228	80	62	113	1,284
,, ,, employees	6,253	4,870	3,552	1,421	3,872	1,448	21,416
Actual horse-power of engines employed	10,521	5,006	5,447	1,206	2,974	1,987	27,141
Approx. value of land and buildings £	492,530	212,791	135,869	100,034	152,240	67,249	1,160,713
,, ,, plant and machinery £	469,457	239,226	321,762	51,229	350,405	129,851	1,561,930
Total amount of wages paid during year £	522,944	413,152	281,167	116,941	554,097	118,997	2,007,298
Value of raw material worked up £	1,243,491	619,072	422,593	584,476	75,707	31,880	2,977,219
Total value of output ... ... £	2,102,030	1259,410	923,326	771,347	799,326	243,500	6,098,939
Value added in process of manufacture £	858,539	640,338	500,733	186,871	723,619	211,620	3,121,720

5. **Agricultural Implement Factories.**—The manufacture of agricultural implements is an important industry in Australia, and is of particular interest owing to the fact that it is one of the first industries to which what has been called the "New Protection" system was sought to be applied (see Section XXVII. hereof). The nature of the machines manufactured may be gathered from the machines scheduled in the Customs tariff, 1906-7, which includes stripper harvesters, strippers, stump-jump ploughs, disc cultivators, winnowers, corn-shellers and baggers, drills, and other implements usually employed in agriculture. The stripper-harvester, which combines the stripper with a mechanism for winnowing and bagging grain, is an Australian invention, and is exported to many countries.

The following table gives particulars of the agricultural implement works of Australia for the year 1909 :—

AGRICULTURAL IMPLEMENT WORKS, 1909.

Items.	N.S.W.	Victoria	Q'land.	S.Aust.	W.A.	Tas.	Cwlth.
Number of factories	21	52	4	59	5	7	148
,, ,, employees	481	1,892	284	1,346	49	29	4,081
Actual horse-power of engines employed	171	677	63	728	68	6	1,713
Approx. value of land and buildings £	55,658	82,443	4,938	50,772	3,843	1,890	199,544
,, ,, plant and machinery £	18,063	84,067	12,121	49,405	5,277	845	169,778
Total amount of wages paid during year £	38,813	181,391	22,443	107,015	5,568	1,480	356,710
Value of raw material worked up £	146,675	242,922	32,734	129,344	5,496	1,970	559 141
Total value of output ... ... £	211,139	611,293	63,588	321,956	14,373	4,990	1,227,339
Value added in process of manufacture £	64,464	368,371	30,854	192,612	8,877	3,020	668,198

(i.) *Development of Agricultural Implement Works.* The following table shews the progress of this industry during the years 1906 to 1909 :—

AGRICULTURAL IMPLEMENT WORKS, 1906 to 1909.

State.	Number of Factories.				Number of Employees.				Approximate Value of Plant and Machinery.			
	1906.	1907.	1908.	1909.	1906.	1907.	1908.	1909.	1906.	1907.	1908.	1909.
									£	£	£	£
New South Wales	17	21	20	21	440	499	434	481	12,850	16,426	16,008	18,063
Victoria	53	55	52	52	1,747	1,618	1,441	1,892	62,808	66,492	69,335	84,067
Queensland ...	8	4	2	4	117	142	108	284	11,470	9,444	8,244	12,121
South Australia ...	49	49	54	59	874	827	1,092	1,346	*	34,034	38,157	49,405
Western Australia	6	2	3	5	56	15	25	49	2,470	3,450	4,259	5,277
Tasmania ...	...	13	9	7	...	45	34	29	...	796	235	845
Commonwealth	133	144	140	148	3,234	3,146	3,134	4,081	†89,598	130,642	136,238	169,778

* Not available. † Exclusive of South Australia.

6. **Engineering, Ironworks, and Foundries.**—The classification in these industries is not very satisfactory. Generally, engineering shops, ironworks, and foundries are included, as also are factories for making nails, safes, patterns, meters, and springs. Railway workshops, agricultural implement factories, cyanide, smelting, pyrites, and metallurgical works, galvanised iron, stoves and ovens, and wire working establishments are not included. The combination of industries is rendered necessary by the limited classification still adopted by some of the States.

ENGINEERING, IRONWORKS, AND FOUNDRIES, 1909.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Cwlth.
Number of factories	229	321	97	51	48	18	764
„ employees	6,725	6,198	2,035	1,830	791	303	17,882
Actual horse-power of engines employed	5,053	3,673	696	1,096	616	269	11,403
Approx. value of land and buildings £	579,556	432,594	121,157	84,606	76,035	41,915	1,335,863
„ „ plant and machinery £	516,700	535,652	143,190	110,799	68,342	39,504	1,414,187
Total amount of wages paid during year £	645,986	578,233	195,767	175,286	86,847	33,173	1,715,292
Value of raw materials worked up £	854,377	727,184	126,192	229,156	97,682	41,700	2,076,291
Total value of output ... ... £	1,858,924	1,701,542	451,911	490,622	222,120	97,050	4,822,169
Value added in process of manufacture £	1,004,547	974,358	325,719	261,466	124,438	55,350	2,745,878

In addition to engineering works which supply local domestic requirements, there are now a number of large and important establishments which engage in the manufacture of special classes of machinery and implements. The manufacture of mining and smelting machinery and apparatus forms an important section of this industry, and many Australian mines have been locally equipped.

7. **Railway Carriages and Rolling Stock, Railway and Tramway Workshops.**—The railway workshops of Australia form an important item in the metal and machinery class, and are chiefly State Institutions. The following table gives the details concerning them, but includes also private establishments manufacturing rolling stock :—

RAILWAY CARRIAGES AND ROLLING STOCK, RAILWAY AND TRAMWAY WORKSHOPS, 1909.

Items.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Cwlth.
Number of factories	26	15	8	6	7	6	68
„ employees	5,929	2,877	1,197	1,375	1,327	471	13,176
Actual h.p. of engines employed	5,196	699	1,415	301	1,848	1,252	10,711
Approx. value of land and buildings £	778,891	276,305	275,153	203,890	322,837	27,275	1,884,351
Approx. value of plant and mach'ny £	473,934	194,990	171,760	141,167	232,902	70,011	1,284,764
Total amt. of wages paid during year £	723,796	360,679	143,075	163,634	179,718	57,477	1,628,379
Value of raw material worked up £	508,631	396,695	190,977	125,392	141,747	63,100	1,426,542
Total value of output ... £	1,331,405	833,111	330,661	293,810	312,768	133,200	3,234,955
Value added in process of manuf'ct're £	822,774	436,416	139,684	168,418	171,021	70,100	1,808,413

8. **Smelting Works.**—The subjoined table gives particulars of metal smelting, cyanide, pyrites, and metallurgical works. The classification of these works does not appear to be carried out on an uniform basis in the several States, and the combination of industries is somewhat unsatisfactory. The returns do not include particulars of plants used on mines.

SMELTING, CYANIDE, PYRITES, ETC., WORKS, 1909.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Cwlth.
Number of factories	38	101	10	7	...	7	163
„ employees	3,175	809	762	1,280	...	1,619	7,645
Actual horse-power of engines employed	7,807	409	1,127	4,507	...	6,297	20,147
Approx. value of land and buildings £	250,938	16,478	14,959	19,240	...	46,802	348,417
„ „ plant and machinery £	1,156,379	55,643	163,993	59,036	...	286,638	1,721,689
Total am'nt of wages paid during year £	477,352	59,172	99,831	149,077	...	176,917	962,349
Value of raw material worked up £	2,993,178	123,542	310,890	523,977	...	1404,839	5,356,426
Total value of output ... ... £	4,521,463	262,358	460,784	1,108,437	...	1997,085	8,350,127
Value added in process of manufact're £	1,528,285	138,816	149,894	584,460	...	592,246	2,993,701

In New South Wales and Queensland the above figures represent smelting works; those in Victoria—ninety cyanide works and five, four, and two for metallurgical, pyrites, and smelting respectively; South Australia five cyanide and two smelting; while those in Tasmania represent four cyanide and three smelting works.

The largest output for the year under review was in New South Wales, viz., £4,521,463, or 54.15 per cent. on the total output for the Commonwealth. Tasmania came second with £1,997,085, or 23.92 per cent.; this amount is made up of £1,233,300 smelting and £763,785 pyrites. Of the total for South Australia the output of smelting was £1,099,010, the balance £9427 representing that obtained from cyanide works. The output in Victoria was £142,966, £24,106, £62,229, and £33,057 from cyanide, metallurgical, pyrites, and smelting works in the order named.

In Western Australia all the plants are worked on the mines and are therefore not collected. Further reference to this industry is made in Section XII. of this book (see page 518).

9. **Bacon-curing Factories.**—The following table gives particulars of factories engaged in bacon-curing in each State during the year 1909:—

BACON-CURING FACTORIES, 1909.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Cwth.
Number of factories	17	26	7	11	3	6	70
„ employees	131	337	229	73	18	33	821
Actual horse-power of engines employed	217	252	219	42	22	49	801
Approx. value of land and buildings £	43,771	33,840	13,600	10,752	5,880	5,050	112,893
„ „ plant and machinery £	16,719	26,092	48,100	3,748	1,138	2,690	98,487
Total amount of salaries and wages paid £	15,382	28,454	19,718	5,709	2,750	2,812	74,825
Value of raw material worked up £	240,124	388,865	210,000	73,934	74,550	38,390	1,025,863
Total value of output ... ... £	276,459	443,277	340,308	85,101	79,496	43,800	1,268,441
Value added in process of manufacture £	36,335	54,412	130,308	11,167	4,946	5,410	242,578

Further information regarding the bacon-curing industry may be found in Section IX., *Farmyard and Dairy Production.*

(i.) *Quantity and Value of Production, 1909.* The following table shews the number of pigs killed and the quantity and value of the production of bacon-curing factories in each State during the year 1909:—

PRODUCTION OF BACON-CURING FACTORIES, 1909.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.*	Tasmania.	C'wealth.
QUANTITY. (,000 omitted).							
Bacon & ham lbs.	7,856	11,245	8,331	2,347	...	671	30,450
Lard ... lbs.	344	555	591	83	...	38	1,611
VALUE.							
Bacon & ham £	256,473	415,000	250,000	82,849	...	21,066	1,025,388
Lard ... £	8,017	13,000	14,743	2,135	...	880	38,775
Other products £	9,376	15,000	23,440	117	...	...	47,933
PIGS KILLED.							
Number	87,267	123,067	115,075	27,282	...	9,987	362,678

* In Western Australia all bacon and hams are imported and some are subsequently smoked in that State.

10. **Butter, Cheese, and Condensed Milk Factories.**—The subjoined table gives articulars of butter, cheese, and condensed milk factories in each State during the year 1909. The returns are exclusive of butterine and margarine factories.

BUTTER, CHEESE, AND CONDENSED MILK FACTORIES, 1909.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Cwlth.
Number of factories	181	211	80	53	3	22	550
" employees	1,014	1,190	760	216	10	93	3,283
Actual horse-power of engines employed	2,136	2,538	860	355	30	126	6,045
Approximate value of land and buildings £	173,628	234,336	79,865	36,685	2,696	17,935	545,145
" " plant & machinery £	229,940	281,630	138,049	29,353	4,117	11,040	694,129
Total amount of wages paid ... £	100,302	109,412	67,466	12,849	976	4,821	295,826
Value of raw material worked up £	2,563,760	2,147,515	962,500	238,324	7,695	92,300	6,012,094
Total value of output ... ... £	2,759,602	2,391,893	1,189,921	272,084	8,874	104,950	6,727,324
Value added in process of manufacture £	195,842	244,378	227,421	33,760	1,179	12,650	715,230

(i.) *Development of Factories, 1906 to 1909.* The following table shews the progress of the factories in this industry from 1906 to 1909 :—

DEVELOPMENT OF BUTTER, ETC., FACTORIES, 1906 to 1909.

State.	Number of Factories.				Number of Persons Employed.				Approximate Value of Plant and Machinery.			
	1906.	1907.	1908.	1909.	1906.	1907.	1908.	1909.	1906.	1907.	1908.	1909.
									£	£	£	£
New South Wales	179	188	183	181	1,045	1,023	979	1,014	218,566	244,438	247,678	229,940
Victoria	221	223	215	211	1,482	1,449	1,294	1,190	307,635	311,241	282,012	281,630
Queensland ...	81	83	82	80	1,333	1,376	1,238	760	104,157	133,861	145,531	138,049
South Australia ...	55	57	54	53	141	213	212	216	†	25,224	27,539	29,353
Western Australia	2	2	2	3	5	5	6	10	2,300	2,300	2,300	4,117
Tasmania ...	20	23	24	22	76	81	95	93	13,351	8,199	11,618	11,040
Commonwealth	558	576	560	550	4,082	4,147	3,824	3,283	646,009‡	725,263	716,678	694,129

† Not available. ‡ Exclusive of South Australia.

(ii.) *Quantity and Value of Production, 1909.* The following table shews the quantity and value of butter, cheese, and condensed milk produced, and the quantity of milk used in butter, cheese, and condensed milk factories in each State during 1909 :—

PRODUCTION OF BUTTER, CHEESE, AND CONDENSED MILK FACTORIES, 1909.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Cwlth.
QUANTITY (,000 OMITTED).							
Butter ... ... lbs.	57,846	49,555	22,385	4,615	154	1,227	135,982
Cheese ... ... "	2,749	3,168	3,524	1,573	...	342	11,356
Condensed and concentrated milk ... lbs.	2,401	3,487	7,038	...	...	...	12,926
VALUE (£,000 OMITTED).							
Butter ... ... £	2,562	2,195	994	232	9	56	6,048
Cheese ... ... £	74	88	74	40	...	7	283
Condensed and concentrated milk ... £	35	57	122	...	...	...	214
MILK USED (,000 OMITTED).							
Butter factories ...gals.	149,463	111,711	51,997	10,300	381	2,550	326,402
Cheese " ... "	2,958	3,202	3,342	1,564	...	329	11,395
Condensed milk factories ... ... gals.	678	1,121	1,830	...	...	...	3,629

11. **Meat and Fish Preserving, Ice and Refrigerating Works.**—These industries are now of considerable importance in Australia. The freezing of various kinds of produce for export has long been an established industry. Large freezing works have now been installed at many ports in the Commonwealth for the purpose of freezing produce chiefly for export, and insulated space for the carriage of frozen produce is provided by a number of steamship companies trading between Australia and other parts of the world. Particulars regarding the export of frozen beef and mutton may be found on pages 345 and 349 hereof respectively. Special terms have been made by the Commonwealth Government in its English mail contract for the provision by the contractors of ample cold-storage facilities. The export of frozen produce is stated to be capable of considerable expansion. The particulars given in the subjoined table include ice-making and freezing works, and also meat-canning factories, separate particulars for each item for all the States not being available.

MEAT AND FISH-PRESERVING, ICE AND REFRIGERATING WORKS, 1909.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Cwlth.
Number of factories	77	29	35	16	6	4	167
" employees	1,617	832	1,379	289	79	20	4,216
Actual horse-power of engines employed	3,115	2,856	2,896	711	576	10	10,164
Approx. value of land and buildings £	425,651	266,752	413,220	146,724	51,920	1,500	1,305,767
" " plant and machinery £	415,070	152,548	231,676	97,637	32,310	400	929,641
Total amount of wages paid during year £	147,160	67,926	133,360	28,405	11,449	956	389,256
Value of raw material worked up £	3,130,643	410,316	1,185,000	173,071	2,152	7,210	4,908,392
Total value of output	3,567,850	557,187	1,456,605	219,967	27,329	9,220	5,838,158
Value added in process of manufacture...	437,207	146,871	271,605	46,896	25,177	2,010	929,766

The following table gives particulars, so far as available, of various classes of meat preserved during the year 1909 :—

MEAT PRESERVING WORKS—PARTICULARS OF ANIMALS TREATED, 1909.

Particulars.	N.S.W.	Vict.	Q'land.	S. Aust.*	W. Aust.*	Tas.*	Cwlth.†
Sheep treated ... No.	1,061,276	941,309	510,858	...	...	...	2,513,443
Cattle ,, ... No.	18,468	7,399	110,290	...	...	...	136,157
Pigs ,, ... No.	232	225	3,407	...	...	...	3,864

* Not available. † Exclusive of South Australia, Western Australia, and Tasmania.

Large quantities of rabbits, hares, and poultry were treated in freezing works, for which, however, complete returns are not available. Exclusive of Victoria and Tasmania, for which States particulars are not available, the returns shew that 49,728 tons of ice, valued at £100,540, were manufactured in the Commonwealth in 1909.

12. **Biscuit Manufactories.**—The following table gives particulars regarding establishments at which the manufacture of biscuits, cakes, etc., was carried on in each State during the year 1909:—

BISCUIT MANUFACTORIES, 1909.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.‡	Cwlth.
Number of factories	6	4	8	2	3	8	31
,, employees	1,154	1,191	305	96	127	151	3,026
Actual horse-power of engines employed	334	148	79	35	65	63	724
Approx. value of land and buildings £	85,747	51,850	20,628	9,050	8,719	26,750	202,744
,, ,, plant and machinery £	76,950	44,800	17,969	4,600	10,655	10,921	165,895
Total amount of wages paid during year £	65,439	57,980	21,507	6,782	9,905	9,105	170,718
Value of raw material worked up £	260,183	230,735	45,040	*	35,600	35,200	604,758†
Total value of output ... ... £	421,640	373,679	91,607	*	60,382	55,100	1,002,408†
Value added in process of manufacture £	161,457	142,944	46,567	*	24,782	21,900	397,650†

* As there are only two factories in this State particulars are not disclosed. † Exclusive of South Australia. ‡ Including confectionery.

13. **Jam and Fruit Preserving, Pickles, Sauces, and Vinegar Manufactories.**—The jam and fruit-preserving industry has increased in importance of late years with the extension of orcharding and fruit-growing. As an exporting industry it is comparatively young, but is of increasing value, and is stated to be capable of considerable expansion. The subjoined table gives particulars of factories at which these industries were carried on in each State during the year 1909. Separate returns for the individual industries are not available for most of the States.

JAM AND FRUIT PRESERVING, PICKLES, SAUCES, AND VINEGAR MANUFACTORIES, 1909.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Cwlth.
Number of factories	35	24	12	26	4	15	116
,, employees	1,061	1,409	196	465	62	888	4,081
Actual horse-power of engines employed	194	388	82	51	63	269	1,047
Approx. value of land and buildings £	77,056	97,096	9,600	19,087	4,910	29,250	236,999
,, ,, plant and machinery £	29,569	42,312	6,993	10,923	2,299	15,778	107,874
Total amount of wages paid during year £	56,779	81,958	9,109	16,987	4,342	34,884	204,059
Value of raw material worked up £	252,354	369,162	33,047	78,217	10,132	157,050	899,962
Total value of output ... ... £	401,506	573,849	49,354	128,282	15,271	244,250	1,412,512
Value added in process of manufacture £	149,152	204,687	16,307	50,065	5,139	87,200	512,550

(i.) *Quantity and Value of Production, 1909.* The following table shews the quantity and value of jams, pickles, and sauces manufactured in each State during the year 1909:—

QUANTITY AND VALUE OF JAMS, PICKLES, AND SAUCES MANUFACTURED, 1909.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
QUANTITY (,000 OMITTED).							
Jam ... ... lbs.	23,416	30,120	3,426	4,549	330	13,855	75,696
Pickles ... ... pints	1,416	1,324	205	322	197	24	3,488
Sauce ... ... pints	1,541	3,608	163	1,074	236	105	6,727
VALUE.							
Jam ... ... £	320,926	470,000	41,900	55,764	4,117	223,592	1,116,299
Pickles ... ... £	26,741	28,000	3,404	8,435	3,378	474	70,432
Sauce ... ... £	25,149	68,000	3,043	18,230	5,070	1,926	121,418

14. **Confectionery.**—The following table shews the position of the confectionery industry in 1909, and it will be seen how it has expanded in nine years when it is stated that at the close of 1900 there were in New South Wales 16 establishments, with 706 employees, and in Victoria 16 establishments, employing 731 persons, using plant and machinery, valued at £2815 in the former and £19,070 in the latter State.

CONFECTIONERY FACTORIES, 1909.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.*	Cwlth.
Number of factories	37	26	11	5	4	...	83
" employees	1,106	1,426	348	254	89	...	3,223
Actual horse-power of engines employed	290	266	62	80	29	...	727
Approx. value of land and buildings £	181,102	56,804	17,586	24,014	11,060	...	290,566
" " plant and machinery £	46,472	45,241	16,241	21,892	6,650	...	136,496
Total amount of wages paid during year £	70,437	78,844	16,975	14,234	6,708	...	187,198
Value of raw material worked up £	301,314	268,591	35,205	39,203	16,803	...	661,116
Total value of output ... ... £	466,481	455,353	102,072	93,069	27,595	...	1,144,570
Value added in process of manufacture £	165,167	186,762	66,867	53,866	10,792	...	483,454

* Included with biscuit factories.

15. **Flour Mills.**—The following table describes the position of the flour-milling industry in the year 1909:—

FLOUR MILLS, 1909.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Cwth.
Number of factories	71	59	14	54	18	15	231
" employees	860	734	195	574	187	126	2,676
Actual horse-power of engines employed	4,342	4,112	752	3,108	827	701	13,842
Approx. value of land and buildings £	402,088	206,529	65,188	119,959	64,259	44,650	902,673
" " plant and machinery £	307,321	226,571	65,820	145,076	53,123	36,810	834,721
Total am'nt of wages paid during year £	97,147	79,547	20,044	59,069	17,333	21,419	294,559
Value of raw material worked up £	2,223,121	2,227,439	330,861	1,001,520	240,993	599,700	6,623,634
Total value of output ... ... £	2,609,268	2,639,519	383,097	1,169,817	309,736	710,700	7,822,137
Value added in process of manufact're £	386,147	412,090	52,236	168,297	68,743	111,000	1,198,503

(i.) *Production of Flour Mills, 1904 to 1909.* The production of flour by the mills in each State of the Commonwealth in the years 1904 to 1909 was as follows:—

FLOUR MILLS—PRODUCTION, 1904 to 1909.

Year.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	West. Aust.	Tasmania.	C'wealth.
	Tons.*	Tons.*	Tons.*	Tons.*	Tons.*	Tons.*	Tons.*
1904	210,137	202,314	34,211	‡	20,185	19,822	486,669†
1905	205,805	209,058	37,505	‡	26,420	18,325	497,113†
1906	225,995	219,166	24,219	‡	26,977	17,692	514,049†
1907	237,442	235,185	28,532	105,395	28,353	17,056	651,963
1908	180,843	192,687	22,266	107,742	31,424	17,426	552,388
1909	214,426	215,547	29,451	97,967	24,878	21,419	603,688

* Tons of 2000 lbs. † Exclusive of South Australia. ‡ Not available.

The total production of flour for the Commonwealth for 1909, viz., 603,688 tons, was valued at £5,979,157; in addition 259,646 tons of bran and pollard, valued at £1,277,102, were made. The total quantity of wheat ground in 1909 was 29,537,348 bushels.

16. **Sugar Mills.**—The following table shews the position of the cane-crushing branch of the sugar-making industry in 1909. This industry is carried on in Queensland and New South Wales, the only States of the Commonwealth in which the sugar-cane is grown. Reference to the other States is therefore omitted from the table.

SUGAR MILLS, 1909.

Items.		N.S.W.	Queensland.	Total.
Number of factories		4	46	50
„ employees		529	3,848	4,377
Actual horse-power of engines employed ...		2,578	8,936	11,514
Approximate value of land and buildings	£	12,177	241,772	253,949
„ „ plant and machinery	£	509,242	1,615,963	2,125,205
Total amount of wages paid during year	£	31,764	251,928	283,692
Value of raw material worked up ...	£	95,894	829,556	924,950
Total value of output	£	197,137	1,461,033	1,658,170
Value added in course of manufacture	£	101,743	631,477	733,220

The first crushing of sugar for commercial use is said to have taken place in New South Wales about 1850 on the plantation of Mr. Thomas Scott; the planting-out of cane was not, however, taken up by settlers, notwithstanding Mr. Scott's earnest advocacy of the industry, until 1862, when a small growth resulted in the establishment of a mill in Queensland; the appliances were rude, but the result satisfactory. In April, 1864, a mill with a modern crushing and boiling plant was opened at Cleveland (Q.) by Hon. Lionel Hope, but his success was only partial, and he closed down his works till 1867. In 1866 the Pampania Company opened a small factory in Queensland, and in the following year two other mills started work. Two factories were erected in the Maryborough district, and in 1868 others were working in the Mackay, Bowen and other districts. The industry was by the end of 1870 firmly established.

An unfortunate feature of the industry is that large quantities of molasses have been and still are allowed to run to waste. Part of the molasses produced is used in distillation, part is turned into food cake for cattle, and part is used for manuring land, but the greatest part produced is put to no use whatever.

The product of the sugar mill is raw sugar and molasses, the former being sent to the refineries in different parts of Australia for further treatment. The following tables shew the progress of this industry from the dates at which information is first obtainable:—

SUGAR MILLS, NEW SOUTH WALES, 1870 to 1909.

Items.	1870.	1877.	1886.	1891.	1896.	1901.	1908.	1909.
Number of factories ...	27	50	64	33	23	12	4	4
,, employees ...	...	1,065	2,259	1,621	1,475	695	543	529
Sugar produced ... Tons	677	7,537	13,750	16,033	28,557	19,519	14,996	14,810
Molasses produced gals.	...	345,543	507,000	1,074,080	2,520,580	1,300,909	922,549	1,072,400

During the year 1909, 131,083 tons of cane were crushed in sugar mills in New South Wales. The reduction in the number of New South Wales mills is due chiefly to the tendency towards concentration of cane-crushing in mills fitted with modern machinery, and the consequent closing of the small home mill. On the north coast of New South Wales some land formerly devoted to sugar-growing has been turned into pastures in connection with the dairying industry.

SUGAR MILLS, QUEENSLAND, 1868 to 1909.

Items.	1868.	1876.	1886.	1891.	1896.	1901.	1908.	1909.
Number of factories ...	10	70	118	68	63	52	51	46
,, employees ...	...	*	*	*	3,796	*	3,964	3,848
,, acres crushed ...	....	7,245	40,756	36,821	66,640	78,160	1433,315‡	1163,569‡
Sugar produced ... Tons	...	8,214	59,225	51,219	100,774	120,858	151,098	134,584
Molasses produced gals.	68,622	416,415	1,784,266	1640,662†	2,195,470	3,679,952	5,980,433	4,763,635

* Not available. † 1890. ‡ Tons of cane crushed.

Information regarding the cultivation of sugar-cane and the bounties payable on cane grown by white labour may be found in the section of this book dealing with *Agricultural Production*. (See pages 396 to 401.)

17. **Sugar Refineries.**—The establishment of the sugar-refining industry considerably antedates the establishment of the sugar-milling industry, the raw material operated upon being originally brought chiefly from Mauritius and the East. In 1909 there were two sugar refineries in Queensland; and one in each of the States of New South Wales, Victoria and South Australia; but there were none in either of the other States. The returns for the individual States cannot be disclosed.

In the five refineries in the Commonwealth an average number of 1470 hands were employed during the year 1909. The approximate value of land and buildings was £252,479; of plant and machinery, £860,793; and the total amount of wages paid during the year was £155,602.

As regards production, the amount of crude sugar used was 185,487 tons, and of refined sugar produced 178,135 tons, valued at £2,519,984, both these amounts being exclusive of the two refineries in Queensland, for which returns are not available.

18. **Breweries.**—Established at an early date in Australia, the main feature of the history of the brewing industry has been the change from the small local brewery in every township of moderate size to the large centralised city brewery. A recent amalgamation in Melbourne resulted in the closing of several large breweries. A workmen's co-operative brewery has been opened in Sydney and a co-operative brewery has been opened in Melbourne by a number of "free" hotelkeepers.

The following table gives particulars of breweries in each State during the year 1909:—

BREWERIES, 1909.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Cwlth.
Number of factories ...	37	32	11	15	24	6	125
„ employees ...	831	1,022	419	326	[illegible]	148	3,238
Actual horse-power of engines employed ...	687	1,876	219	[illegible]	576	114	3,704
Approx. value of land and buildings ... £	330,879	297,321	96,509	99,722	170,102	403,750	1,398,283
Approx. value of plant and machinery ... £	277,736	245,606	73,720	62,945	114,034	43,630	817,671
Total amount of wages paid during year £	104,564	130,906	48,032	38,035	79,492	19,003	420,032
Value of raw material worked up ... £	436,999	343,022	136,022	66,452	125,502	49,770	1,157,707
Total value of output £	967,914	771,779	375,059	238,302	399,919	111,950	2,864,923
Value added by process of manufacture ... £	530,975	428,757	239,037	171,850	274,417	62,180	1,707,216

(i.) *Production and Materials Used, 1909.* The following table shews the quantity and value of ale and stout brewed and the quantity of raw materials used in each State during the year 1909:—

PRODUCTION AND MATERIALS USED IN BREWERIES, 1909.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
ALE AND STOUT BREWED.							
Quantity gallons (,000 omitted)	16,155	16,552	5,246	3,719	4,600	1,890	48,162
Value ... £	761,998	770,000	375,059	234,761	386,978	124,297	2,653,093
RAW MATERIALS USED. (,000 OMITTED.)							
Malt ...bush.	571	504	182	102	137	77	1,573
Hops ... lbs.	682	632	283	141	226	114	2,078
Sugar ... cwt.	77	103	45	19	25	8	277

19. **Distilleries.**—The subjoined table gives particulars of distilleries in each State during the year 1909. There are no distilleries in either of the States of Western Australia or Tasmania.

DISTILLERIES, 1909.

Particulars.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	Cwlth.
Number of factories	3	7	3	19	...	...	32
„ employees	29	99	26	79	...	...	233
Actual horse-power of engines employed ...	80	165	66	155	...	...	466
Approximate value of land and buildings £	4,730	79,905	6,277	23,799	...	...	114,711
Approx. value of plant and machinery £	38,394	61,500	6,807	20,724	...	...	127,425
Total amount of wages paid during year £	2,415	11,414	3,526	5,928	...	...	23,283
Value of raw materials worked up £	39,573	28,351	5,465	44,795	...	...	118,184
Total value of output ... ... £	59,825	50,657	39,458	86,666	...	...	236,606
Value added in process of manufacture £	20,252	22,306	33,993	41,871	...	...	118,422

(i.) *Production of Spirits and Materials Used, 1909.* The total quantity of brandy distilled in 1909 was 208,380 proof gallons, and of other spirits was 2,156,577 proof gallons. The materials used comprised 348,411 cwt. of molasses and 2,199,326 gallons of wine. Particulars for the separate States are not available for publication.

20. **Tobacco, Cigars and Cigarettes.**—During the year 1909 there were thirty-seven establishments in which the manufacture of tobacco, cigars, and cigarettes was carried on. In Queensland there were only two such establishments, and particulars as to output etc. are therefore not disclosed. In Tasmania there were no factories engaged in this industry.

TOBACCO, CIGAR, AND CIGARETTE FACTORIES, 1909.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Cwlth.
Number of factories	15	14	2	3	3	...	37
,, employees	1,250	2,449	90	180	22	...	3,991
Actual horse-power of engines employed	312	415	12	24	1	...	764
Approx. value of land and buildings £	175,824	174,354	2,200	10,484	3,640	...	366,502
,, ,, plant and machinery £	119,676	104,973	4,350	12,084*	291	...	241,374
Total amount of wages paid during year £	102,629	171,495	4,774	15,733	2,007	...	296,638
Value of raw material worked up £	609,653	592,807	*	49,337	3,040	...	1254,837†
Total value of output ... ... £	857,837	963,660	*	80,306	5,489	...	1907,292†
Value added in process of manufacture £	248,184	370,853	*	30,969	2,449	...	652,455†

* As there are only two factories in this State, particulars of output etc. are not disclosed.
† Exclusive of Queensland.

(i.) *Development of Industry.* This industry was early established in Australia, and the figures given in the subjoined table shew its progress during recent years. In 1896 there were in New South Wales eight establishments employing 641 persons, of whom 471 were males and 170 females. The plant and machinery employed were valued at £55,700. In Victoria, in this same year, there were twelve establishments employing 650 persons, of whom 424 were males and 226 were females. The value of the plant and machinery employed was £42,410. The Australian market is now largely supplied with local manufactures.

DEVELOPMENT OF TOBACCO, CIGAR, AND CIGARETTE FACTORIES, 1906 to 1909.

State.	Number of Factories.				Number of Persons Employed.				Approximate Value of Plant and Machinery.			
	1906.	1907.	1908.	1909.	1906.	1907.	1908.	1909.	1906.	1907.	1908.	1909.
									£	£	£	£
N.S. Wales ...	13	11	12	15	1,016	1,103	1,309	1,250	104,051	111,296	119,012	119,676
Victoria	12	13	13	14	1,846	2,019	2,542	2,449	78,522	88,341	100,880	104,973
Queensland ...	2	2	2	2	63	71	79	90	4,684	2,020	2,300	4,350
South Australia...	2	3	3	3	135	174	175	180	*	12,716	12,084	12,084
West Australia ...	3	3	3	3	30	23	32	22	235	265	297	291
Tasmania ...	...	...	...	...	...	...	...	...	...	...	...	...
Commonwealth	32	32	33	37	3,090	3,390	4,137	3,991	187,492†	214,638	234,573	241,374

* Not available. † Exclusive of South Australia.

(ii.) *Quantity and Value of Production, and Tobacco Leaf Used, 1909.* The following table shews the quantity and value of the production of tobacco factories in each State, and the quantities of imported and Australian-grown leaf used during the year 1909 :—

PRODUCTION OF TOBACCO FACTORIES, AND QUANTITY OF LEAF USED, 1909.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Cwlth.
QUANTITY (,000 OMITTED).							
Manufact'ed tobacco lbs.	3,695	5,161	187	394	4	...	9,441
Cigars ... ... lbs.	57	211	...	10	7	...	285
Cigars ... ... No.	5,070	17,893	...	858	510	...	24,331
Cigarettes ... lbs.	1,300	323	...	...	1	...	1,624
Cigarettes ... No.	572,372	137,847	...	...	209	...	710,428
TOBACCO LEAF USED (,000 OMITTED).							
Australian leaf... lbs.	847	200	227	144	3	...	1,421
Imported leaf ... lbs.	3,570	4,734	...	219	15	...	8,538

21. **Woollen and Tweed Mills.**—The manufacture of woollens and tweeds was established in Australia at a comparatively early period in its industrial history, the first record in Victoria dating back to 1867. The following table, which gives particulars of the mills in each State during the year 1909, shews that the industry is now well established:—

WOOLLEN AND TWEED MILLS, 1909.

Items.	N.S.W.	Vic.	Q'ld.†	S.A.	W.A.	Tas.	Cwlth.
Number of factories	7	9	2	2	...	4	24
,, employés	628	1,717	165	177	...	278	2,965
Actual horse-power of engines employed ...	703	2,443	131	111	...	134	3,522
Approx. value of land and buildings £	63,752	118,777	9,499	6,000	...	24,900	222,928
,, ,, plant and machinery £	82,117	265,008	28,634	10,763	...	37,250	423,772
Total amount of wages paid during year £	28,744	100,140	7,781	7,380	...	11,630	155,675
Value of raw material worked up £	51,863	202,059	*	*	...	23,450	303,283
Total value of output ... ... £	97,051	403,106	*	*	...	46,100	596,665
Value added in process of manufacture £	45,188	201,047	*	*	...	22,650	293,382

* As there are only two factories each in Queensland and South Australia particulars of output, etc., are not disclosed but are added in with the total for the Commonwealth. † One woollen and tweed mill, and one cotton ginning establishment.

(i.) *Progress of Industry, 1906 to 1909.* The progress of the woollen and tweed cloths manufacturing industry during the last four years is shewn in the following table for each State in which mills were in operation:—

DEVELOPMENT OF WOOLLEN MILLS IN AUSTRALIA, 1906 to 1909.

State.	Number of Factories.				Number of Persons Employed.				Approximate Value of Plant and Machinery.			
	1906.	1907.	1908.	1909.	1906.	1907.	1908.	1909.	1906.	1907.	1908.	1909.
									£	£	£	£
N.S.W. ...	5	5	5	7	338	395	455	628	36,400	39,433	43,933	82,117
Victoria ...	9	9	9	9	1,434	1,589	1,757	1,717	236,988	259,740	263,100	265,008
Q'land	1	1	1	2*	117	119	97	165*	24,500	19,364	19,364	28,634*
S. Aust.	2	2	2	2	155	149	145	177	†	13,850	11,200	10,763
W. Aust....	...	...	...	...	...	...	...	...	...	...	...	...
Tasmania	4	4	4	4	274	257	263	278	42,200	45,413	33,250	37,250
C'wealth	21	21	21	24	2,318	2,509	2,717	2,965	†	377,800	370,847	423,772

* Including one cotton ginning establishment. † Not available.

(ii.) *Quantity and Value of Production, 1909.* The production of the woollen mills of Australia consists chiefly of tweed cloths, flannels, and blankets, all of which have acquired a reputation for purity and durability. Detailed particulars for the several States are not generally available for publication. The total length of tweed and cloth manufactured was about 1,700,000 yards, valued at about £190,000. In New South Wales 594,512 yards of tweed and cloth, in Victoria 949,674 yards, and in Tasmania 57,010 yards were manufactured. The production of flannel in the Commonwealth in 1909 amounted to about 5,135,000 yards, valued at £650,000, and of blankets, shawls, and rugs to 650,000, valued at £150,000.

No cotton spinning or weaving or linen weaving is carried on in Australia. Cotton ginning has been carried on at periods far apart in the northern States, and a mill was lately reopened at Ipswich in Queensland.

22. **Boots and Shoes.**—Among the manufactories of Australia the boot and shoe industry holds an important place both in respect to the employment afforded by it and the range of its output. The following table shews particulars of this industry for each State during the year 1909:—

BOOT AND SHOE FACTORIES, 1909.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Cwlth.
Number of factories	102	136	25	23	11	18	315
,, employees	4,460	6,894	1,135	1,069	209	261	14,023
Actual horse-power of engines employed	717	835	222	172	24	38	2,008
Approx. value of land and buildings £	204,253	164,756	38,556	60,870	9,615	22,468	500,518
,, ,, plant and machinery £	141,822	129,411	25,712	29,644	6,735	4,410	337,734
Total amt. of wages paid during year £	308,283	415,011	69,715	73,617	17,197	16,989	900,812
Value of raw material worked up £	601,586	884,329	121,389	127,262	33,688	36,190	1,804,444
Total value of output ... ... £	1,060,348	1,487,789	217,361	229,386	59,728	57,600	3,112,212
Value added in process of manufacture £	458,762	603,460	95,972	102,124	26,040	21,410	1,307,768

(i.) *Progress of Industry, 1906 to 1909.* The progress of the industry in the last four years is shewn in the following table :—

DEVELOPMENT OF BOOT AND SHOE FACTORIES, 1906 to 1909.

State.	No. of Factories.				No. of Persons Employed.				Approximate Value of Plant and Machinery.			
	1906.	1907.	1908.	1909.	1906.	1907.	1908.	1909.	1906.	1907.	1908.	1909.
									£	£	£	£
N.S.W. ...	102	102	105	102	4,767	4,786	4,650	4,460	122,580	131,884	134,575	141,822
Victoria ...	134	139	139	136	5,703	6,303	6,348	6,894	99,042	122,347	123,204	129,411
Q'land. ...	29	32	27	25	1,015	1,134	1,094	1,135	20,592	22,078	26,652	25,712
S. Aust. ...	17	21	24	23	1,212	1,162	1,077	1,069	*	28,352	30,748	29,644
W. Aust....	12	12	10	11	236	249	185	204	6,626	7,232	5,967	6,735
Tasmania	15	23	23	18	323	281	252	261	6,713	4,859	3,185	4,410
C'wealth	309	329	328	315	13,256	13,915	13,606	14,023	255,553†	316,752	324,331	337,734

* Information not available. † Exclusive of South Australia.

(ii.) *Value and Quantity of Production, 1909.* The number and value of boots and shoes, and slippers made at factories in each State during the year 1909, are shewn in the following table:—

PRODUCTION OF BOOT AND SHOE FACTORIES, 1909.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Cwlth.
QUANTITY (,000 OMITTED).							
Boots and shoes ... Pairs	3,596	4,649	762	819	190	142	10,158
Slippers ... ... Pairs	409	232	46	21	...	2	710
Uppers ... ... Pairs	104	23	7	11	4	12	161
VALUE.							
Boots and shoes ... £	981,391	1,420,000	212,397	213,795	56,343	43,807	2,927,733
Slippers ... ... £	39,873	35,000	2,556	5,520	25	298	83,272
Uppers ... ... £	21,794	5,000	1,822	1,835	1,320	1,836	33,607

23. **Hats and Caps.**—The manufacture of hats and caps is now well established in the Commonwealth. The position of the industry in the several States in 1909 is shewn in the following table :—

HAT AND CAP FACTORIES, 1909.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Cwlth.
Number of factories	30	35	5	2	1	...	73
,, employees	1,349	1,688	173	144	7	...	3,361
Actual horse-power of engines employed	210	319	12	38	...	...	579
Approx. value of land and buildings £	79,906	68,967	15,240	3,656	720	...	168,489
,, ,, plant and machinery £	39,966	35,427	7,420	5,182	50	...	88,045
Total amount of wages paid during year £	65,444	104,424	7,410	7,627	100	...	185,005
Value of raw material worked up £	125,845	140,298	8,966	*	*	...	285,310
Total value of output ... ... £	233,135	296,524	21,533	*	*	...	573,744
Value added in process of manufacture £	107,290	156,226	12,567	*	*	...	288,434

* As there are only two factories in South Australia and one in Western Australia, details relating to output, etc., are not available for separate publication; the amounts, however, are included in the totals for the Commonwealth.

(i.) *Progress of Industry, 1906 to 1909.* As appears from the following table, which shews the progress of this industry in the States in which it was carried on during the years 1906 to 1909, there has been a considerable investment of capital in this industry in New South Wales and Victoria during recent years, and the industry is now in a flourishing condition in both these States.

DEVELOPMENT OF HAT AND CAP FACTORIES, 1906 to 1909.

State.	Number of Factories.				No. of Persons employed				Approximate Value of Plant and Machinery.			
	1906.	1907.	1908.	1909.	1906.	1907.	1908.	1909.	1906.	1907.	1908.	1909.
									£	£	£	£
New South Wales	23	22	26	30	1,036	1,094	1,221	1,349	32,750	35,653	34,315	39,966
Victoria	32	33	34	35	1,319	1,404	1,520	1,688	24,588	28,452	29,650	35,427
Queensland ...	4	3	4	5	122	140	129	173	6,083	7,142	7,662	7,420
South Australia ...	*	*	1	2	50	*	...	144	*	*	*	5,182
Western Australia	...	...	...	1	...	...	...	7	...	...	...	50
Commonwealth	59	58	65	73	2,527	2,638	2,870	3,361	63,421	71,247	71,627	88,045

(ii.) *Quantity and Value of Production, 1909.* Particulars regarding the quantity and value of the production of hat and cap factories in each State are not available for separate publication. The total value of hats and caps made in Australia in 1909 was £565,742.

24. **Coach and Wagon Building Works.**—This industry forms the principal branch of manufacture in Class XI. (see § 1, 3, above). The subjoined table gives particulars of factories in this branch of industry in each State during the year 1909. The returns include establishments for the manufacture of wheels, spokes, etc.

COACH AND WAGON BUILDING WORKS, 1909.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Cwlth.
Number of factories	234	265	70	95	29	27	720
,, employees	2,304	2,684	594	1,074	268	177	7,101
Actual horse-power of engines employed	406	307	93	246	56	...	1,108
Approx. value of land and buildings £	238,340	208,202	50,644	88,751	24,690	16,183	626,810
,, ,, plant and machinery £	50,366	47,697	18,801	23,736	7,460	1,812	149,872
Total amount of wages paid during year £	175,833	174,393	46,665	82,599	29,593	9,875	518,958
Value of raw material worked up £	186,049	186,658	41,919	95,554	30,973	10,560	551,713
Total value of output ... ... £	461,293	474,715	120,559	222,449	72,273	26,880	1,378,169
Value added in process of manufacture £	275,244	288,157	78,640	126,895	41,300	16,320	826,456

25. **Furniture and Cabinet Making and Billiard Table Making.**— These industries constitute the principal manufactures in Class XIII. (see § 1, 4, above). The following table gives particulars for 1909:—

FACTORIES FOR FURNITURE AND CABINET MAKING AND BILLIARD TABLE MAKING, 1909.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Cwlth.
Number of factories	110	140	48	22	18	7	345
" employees	2,080	1,574	797	754	230	210	5,645
Actual horse-power of engines employed	468	294	259	419	69	63	1,572
Approx. value of land and buildings £	170,088	170,121	60,471	39,540	28,170	17,500	485,890
" " plant and machinery £	27,284	23,245	16,027	14,890	2,995	2,540	86,981
Total amount of wages paid during year £	190,753	136,957	60,274	63,846	23,745	16,918	492,493
Value of raw material used ... £	177,061	169,533	57,929	47,019	25,153	20,940	497,635
Total value of output ... ... £	439,544	368,936	143,067	141,673	54,518	45,570	1,193,308
Value added in process of manufacture £	262,483	199,403	85,138	94,654	29,365	24,630	695,673

26. **Electric Light and Power Works.**—Particulars of the electric light and power works of the Commonwealth in the year 1909 are given in the subjoined table. In South Australia there is only one electric light and power station. Particulars for that State are therefore not disclosed in regard to output.

ELECTRIC LIGHT AND POWER WORKS, 1909.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Cwlth.
Number of factories	103	13	6	1	18	7	148
" employees	769	442	90	149	218	159	1,827
Actual horse-power of engines employed	40,479	13,293	4,517	5,068	14,632	8,594	86,583
Approx. value of land and buildings £	349,663	161,911	15,429	28,000	64,586	7,825	627,414
" " plant and machinery £	1,047,680	577,403	74,797	262,710	452,230	106,984	2,521,804
Total amount of wages paid during year £	100,906	54,621	9,865	17,175	42,198	17,180	241,945
Total value of output ... ... £	620,478	207,959	44,149	*	205,215	65,400	1,143,201†

* As there is only one electric light and power station in South Australia, particulars of value of output are not disclosed. † Exclusive of South Australia.

27. **Gas and Coke Works.**—There are gas works in operation in nearly all the chief towns in the Commonwealth. In New South Wales there are thirteen and in Queensland four coke factories which are worked as separate industries. The subjoined table gives particulars of gas and coke works in each State:—

GAS AND COKE WORKS, 1909.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Cwlth.
Number of factories	*52	47	†18	3	3	3	126
" employees	1,277	1,390	380	307	77	133	3,564
Actual horse-power of engines employed	2,104	1,038	147	82	30	375	3,776
Approx. value of land and buildings £	525,166	468,588	126,209	7,290	25,290	134,800	1,287,343
" " plant and machinery £	814,263	1,241,906	395,682	370,986	58,700	121,852	3,003,389
Total amount of wages paid during year £	157,886	181,965	44,505	37,218	12,956	17,836	452,366
Value of raw material used ... £	288,172	197,373	22,141	39,200	11,241	19,340	577,467
Total value of output ... ... £	886,814	676,528	162,104	125,440	33,057	66,300	1,950,243
Value added in process of manufacture £	598,642	479,155	139,963	86,240	21,816	46,960	1,372,776

* Including 13 coke factories. † Including 4 coke factories.

The following table gives particulars regarding the quantity and value of the production of gas and coke works in each State during the year 1909 :—

PRODUCTION OF GAS AND COKE WORKS, 1909.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Cwlth.
QUANTITY.							
Gas made ... 1000 cub. ft.	3,481	2,293	472	345	82	141	6,814
Coke ... ...Tons	351,215	131,695	37,660	15,000	4,321	5,902	545,793
VALUE.							
Gas ... ... £	558,025	577,000	137,004	95,400	23,823	38,922	1,430,174
Coke ... ... £	221,595	79,000	19,700	14,300	8,384	4,116	347,095
COAL USED.							
Coal ... ...Tons	*583,181	217,473	61,524	34,300	7,426	20,231	924,135

* Also 33,708 tons shale.

SECTION XIV.

WATER CONSERVATION AND IRRIGATION.

§ 1. Water Supply Works.

1. **General.**—In every country in which droughts are recurrent, there are few problems of greater importance to be solved than that of an adequate system of water conservation. Much has been done in the Commonwealth so far as the supply of water to centres of population is concerned, and a description of several of the metropolitan water works will be found herein, viz., in the section dealing with "Local Government."

2. **The Goldfields Water Supply of Western Australia.**—The scheme by which the Government of Western Australia undertook to provide a permanent supply of water for the population on the eastern goldfields of that State comes properly under the heading of "Water Supply Works."

The Act under which the works were constructed was introduced in Parliament by Sir John Forrest, G.C.M.G., then Premier of Western Australia, in September, 1896, and provided for an expenditure of £2,500,000 and a daily supply of 5,000,000 gallons. The works, designed by the late Mr. C. Y. O'Connor, Engineer-in-Chief of the State, were originally known as the "Coolgardie Water Scheme," but are now officially called the "Goldfields Water Supply." The first construction work in connection with the scheme was commenced early in 1898, and the water was delivered in Kalgoorlie in January, 1903. The source of supply is the Helena River, in the Darling Ranges, where, at about 18 miles from Perth, an impounding reservoir, 760 acres in extent, with a catchment area of 569 square miles, has been constructed. From the impounding reservoir the water is pumped through a steel main of the locking-bar type, 30 inches in internal diameter, by a series of eight pumping stations located at intervals along the main. Each pumping station, except No. 1, which draws direct from the reservoir, is provided with a suction tank which receives the water pumped by the preceding station. The last pumping station delivers the water into a main service reservoir of 12 million gallons capacity, situated at Bulla Bulling at a height of 1290 feet above the lowest off-take from the Helena Reservoir, and distant 307½ miles therefrom. From the main service reservoir the water flows by gravity to Kalgoorlie, a further distance of 44 miles; the total length of the 30 in. main being 351½ miles. The water is distributed to the various townships and to the mining centres from service reservoirs, and a considerable area of agricultural country is also supplied by branch pipe lines from the main conduct. The area of operations embraces 16,000 square miles, the total length of the water area being approximately 380 miles. The total cost of the original works, including expenses of raising loans, was £2,866,454, and of supplementary works £371,042, making a total of £3,237,496. The Mundaring reservoir cost £249,000. Its capacity is 4600 million gallons. The height of the wall above the river bed is 100 ft.; length of wall, 757 ft.; width of wall at bottom, 85 ft.; at top, 11 ft.; and when the reservoir is full the water runs back for a distance of seven miles. From the 1st October, 1909, the price for trading supplies was raised from 5s. 3d. to 7s. 3d. per 1000 gallons; the following are the rates per 1000 gallons for ordinary mining supplies:—Where Mundaring water

is exclusively used for all purposes of the mine, 7s.; where Mundaring water is supplemented by supplies from the lease on which the mine is situated, 10s.; no restriction, 15s. During the financial year 1909-10 the total consumption amounted to 1,001,739,000 gallons, an increase on the previous year of 32,193,000 gallons. The gross revenue was £221,406, and the working expenses £72,118, leaving a surplus available towards interest and sinking fund of £149,288. The outlay for interest and sinking fund charges in respect of supplementary capital borrowed on debentures absorbed £21,085, leaving £128,203 payable to the State Treasury. During the financial year the State Treasury paid £171,050 interest and sinking fund on State loans in respect of these works, leaving a net deficiency of £42,847.

3. **The Mines Water Supply Branch.**—Prior to the commencement of the Goldfields Water Supply Scheme, works of different kinds were carried out by Government in order to afford temporary relief to the population on the goldfields. These works comprised shallow and artesian boring, conservation and protection of water in natural and artificial reservoirs, sinking of wells, erection of condensers, etc. About 2000 shallow bores have found fresh water, and a few hundred, salt water, which, however, is serviceable for battery purposes. Administratively, the goldfields area is divided into three water supply districts—Coolgardie, Murchison, and Pilbara. It has been the policy of the department charged with the supervision of water supply works, viz., the Mines Department, to lease watering stations wherever that could be done to advantage, and from twenty to thirty leases are generally executed in the course of a year. The tanks which have been constructed by the department vary in size from 200,000 gallons to 37,500,000 gallons (at Niagara).

§ 2. Artesian Wells.

1. **General.** (i.) *The Great Australian Artesian Basin.* Although there are some artesian wells outside this area, yet, in speaking of the "Great Australian Artesian Basin," the area is understood which includes (*a*) considerably more than one-half of Queensland, taking in practically all that State lying west of the Great Dividing Range, with the exception of an area in the north-west contiguous to the Northern Territory; (*b*) a considerable strip of New South Wales along its northern boundary and west of the Great Dividing Range; and (*c*) the north-eastern part of South Australia proper, together with the extreme south-eastern corner of the Northern Territory. This basin (shewn approximately by map in Section XXVI., Local Government), is said to be the largest yet discovered, and is about 569,000 square miles, of which 376,000 square miles are in Queensland, 110,000 square miles in South Australia, and 83,000 square miles in New South Wales. The area of the intake beds is estimated at 60,010 square miles, viz., 50,000 square miles in Queensland and 10,010 square miles in New South Wales. The basin is what is technically known as a one-sided or half-basin, the intake beds outcropping along its eastern and north-eastern sides only, while the remainder of the water-bearing formation is hidden under the superficial deposits forming the plains of the interior of the States. Although it has not been definitely decided whether the basin has outlets towards the Gulf of Carpentaria in the north, and towards the Great Australian Bight or towards Lake Eyre in the south, there is a preponderance of opinion and strong evidence in favour of the existence of such outlets, an opinion which receives strong support from the maps published by the Geological Department of Queensland, which shew an apparent dip in the water-bearing strata towards the Gulf of Carpentaria in the north and towards Lake Eyre and the Great Australian Bight in the south. It is estimated that at present there are about 1650 bores tapping the basin in the three States.

(ii.) *The Western Australian Basin.* The Recent and Tertiary strata which enter Western Australia at its eastern border, and which have a prevailing dip towards the

Great Australian Bight, form an artesian water area. But where boring operations have been undertaken the water has been found to be salt or brackish, and there are other conditions affecting the supply, such as local variations in the thickness of the beds, their relative porosity, and the unevenness of the floor upon which they rest, which so far have not been examined with sufficient thoroughness to enable many particulars to be given in regard to this basin.

In the coastal area to the west of the Darling Range artesian boring has, on the other hand, been carried on successfully for many years.

(iii.) *The South Australian-Victorian Basin.* In August, 1910, a report was issued by the Government Geologist of South Australia on the geology of the country south and east of the Murray River, with special reference to subterranean water supply in wells and bores along the Pinnaroo and Bordertown railways. The tertiary formation in the district under consideration, occupies the western portion of a vast basin or depression of which the greater part extends eastward into Victoria and northward into New South Wales. This basin is bounded on the west by the azoic and palæozoic rocks of the Mount Lofty and other ranges, extending northwards from near the mouth of the Murray to the Barrier Ranges, and on the east and north-east by the ranges of Victoria and New South Wales. This tertiary water-basin is occupied by a succession of sedimentary formations, both porous and impervious. It is of interest to note that the waters of the Murray River are partly supplied by influx from the water-bearing beds of this basin ; this is proved by the fact that, at low water, springs are observed at certain places flowing into it from beneath the limestone cliffs from Pyap Bend downwards. Similar springs must exist along the courses of other branches of the River Murray system, where they cut through the tertiary formation.

(iv.) *Plutonic or Meteoric Water.* While it has long been held that the Australian artesian basin is a typically-formed one, and that its intake beds are as described above, a theory has been recently advanced (viz., by Professor Gregory,[1] formerly of Melbourne, but now of Glasgow University), that the water, although called artesian, is not impounded rain-water, or *meteoric* water at all, but is derived from the older rocks, *i.e.*, that it is *plutonic* in character. If this were so, and if the water contained in the basin were merely such as occurs in the molten lava from volcanoes or imprisoned in the solidified quartz of granites, we should, of course, be rapidly exhausting our supply. He founds his main arguments on (*a*) the amount of friction caused by the flow of water through the minute interstices between the sand grains, *i.e.*, on the loss of its hydrostatic head before the bores are reached; (*b*) on anomalies in temperature and pressure; (*c*) on the chemical analyses of some of the waters; and (*d*) on evaporation measurements in Central Australia. He suggests the pressure of overlying rock, and gas pressure caused by the internal heat of the earth, as causes of the flow from the bores.

This new theory has recently been replied to at length by the Government Geologist of New South Wales.[2] While this Year Book is hardly the place to enter at length upon arguments of a purely scientific nature, it may be said that Mr. Pittman avers that "many of Professor Gregory's statements appear to be in opposition to observed facts." In regard to the loss of hydrostatic head, he quotes the opinion of the United States Geological Survey in regard to bores in Kentucky, and the experience in connection with the Grenelle bore in Paris. So far as temperature is concerned, he shews that it would be illogical to contend that, because some Australian bores give higher rates of increase than the average results of a number of ascertained bores and tunnels in other parts of the world, the water must be plutonic and not meteoric. In regard to pressure, stress is laid on the more accurate results obtained with the dumpy level than with the aneroid, and it is shewn how accurately the height to which the water would rise has been

1. See *J. W. Gregory, F.R.S., D.Sc.*: "The Dead Heart of Australia"; London, John Murray, 1906.

2. *E. F. Pittman, A.R.S.M., Government Geologist of New South Wales:* "Problems of the Artesian Water Supply of Australia, with special reference to Professor Gregory's Theory." (Clarke Memorial Lecture, delivered before the Royal Society of New South Wales, 31st October, 1907.)

predicted in many localities. It is also pointed out that the isopotential lines as laid down are tentative, as information in regard to many private wells is unreliable. The question of the chemical constituents of artesian water is dealt with at length, and it appears that instead of decreasing from east to west, as stated by Professor Gregory, the salinity of the water actually increases, and that some of the wells in the eastern district mentioned by the latter as being particularly rich in saline matter are actually outside the artesian basin altogether.

In regard to evaporation measurements in Central Australia, Mr. Pittman shews also that these do not affect the question at issue at all, as the water does not enter the porous beds in Central Australia, but on the flanks of the Dividing Range, where the rainfall is copious. The theories of the pressure of overlying rock and of gas pressure are also utterly repudiated.

The strength of the argument seems to be unquestionably in favour of the older theory of meteoric water, as upheld by Mr. Pittman, and in his reply he appears to have disposed of every feature in Professor Gregory's argument to which weight might have been attached.

(v.) *Particulars of Artesian and Sub-artesian Bores, 1909.* The following table gives particulars of artesian and sub-artesian bores in each State and in the Commonwealth up to the end of the year 1909:—

COMMONWEALTH AND STATES.—PARTICULARS OF ARTESIAN AND SUB-ARTESIAN BORES, 1909.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.†	W. Aust.	Tas.	C'wlth.
Bores existing ... No.	480	25	1,580	33	80	...	2,198
Total depth bored ... feet	763,879	5,937	1,644,400	50,377‡	88,266	...	2,552,859
Daily flow ... ,000 gals.	116,000§	*	520,300	10,947	26,505	...	673,752‖
Depth at which artesian water was struck—							
Maximum ... feet	4,341	466	5,045	4,850	3,011†	...	5,045
Minimum ... feet	46	140	60	233	420†	...	46
Temperature of flow—							
Maximum ... °Fahr.	140	*	202	208	140†	...	208
Minimum ... °Fahr.	70	*	60	78	60†	...	60

* Not available. † Government bores only. ‡ Flowing bores only. § Not including the flows of some of the bores to the west of the Darling and Warrego Rivers. ‖ Incomplete.

2. **New South Wales.**—Artesian boring in New South Wales dates from 1879, when a private bore was put down on the Kallara pastoral holding, between Bourke and Wilcannia. The first Government bore was that at Goonery, on the Bourke-Wanaaring road, completed in 1884. At the end of 1910, out of 480 known artesian bores in New South Wales, 155 were Government bores.

The distribution of these bores was as follows:—

NEW SOUTH WALES ARTESIAN BORES ON 31st DECEMBER, 1909.

Particulars.	State.	Private.	Total.
Bores existing ... ... No.	155	325	480
Total depth bored ... ... feet	297,440	466,439	763,879
Daily flow ... ... gallons	48,076,000*	67,924,000	116,000,000*
Depth at which water was struck—			
Maximum ... ... feet	4,341	3,400	...
Minimum ... ... ,,	89	46	...
Temperature of flow—			
Maximum ... ... °Fahr.	140	138	...
Minimum ... ... ,,	70	71	...

* Not including the flows of some of the bores to the west of the Darling and Warrego Rivers which give a comparatively small total discharge. Accurate meter gaugings are being extended throughout this part of the State.

Of the wells at the end of 1910, the depth is stated in 474 cases, and it appears that only 21 wells were less than 500 feet deep; while 87 ranged from 500 to 1000 feet; 235 from 1000 to 2000 feet; 100 from 2000 to 3000 feet; and 31 over 3000 feet. There is a preponderance of wells from 1000 to 2000 feet in depth, but neither the shallow wells under 500 feet, nor the very deep wells over 3000 feet are so numerous in proportion as in Queensland. The two deepest wells in New South Wales are those at Boronga, in the County of Stapylton, with a depth of 4341 feet and a daily outflow of 1,062,133 gallons; and at Dolgelly, in the Parish of Careunga, in County Stapylton, with a depth of 4086 feet, and an outflow of 637,124 gallons per day. The largest outflow is stated to be that at the Boobora bore, in the County of Stapylton, which yields 1,168,710 gallons a day, and has a depth of 2197 feet.

The water of a large number of wells has been analysed by Mr. J. C. H. Mingaye, F.C.S., etc., of the New South Wales Mines Department, and it may be of interest to give a list of those containing, among all the wells examined, the maximum quantities of particular salts in solution :—

NEW SOUTH WALES ARTESIAN BORES.—CHEMICAL ANALYSIS.

Name of Bore.	County.	Salt found in greater quantity than in any other bore.[1]	Grains per Imperial Gallon.
Tunderbrine No. 1 ...	Gowen	Sodium carbonate ($Na_2 CO_3$)	124.7
Sibraas	Gunderbooka ...	Potassium carbonate ($K_2 CO_3$)	8.3
Coonamble No. 2 ...	Leichhardt ...	Calcium carbonate ($Ca CO_3$)	11.7
Bancanya	Mootwingee ...	Magnesium carbonate ($Mg CO_3$)	10.7
Cuttaburra	Irrara	Sodium chloride ($Na Cl$)	349.0
Warratta	Evelyn	Potassium chloride ($K Cl$)	22.1
Momba	Killara	Magnesium chloride ($Mg Cl_2$)	28.0
Sandy Creek	Mootwingee ...	Sodium sulphate ($Na_2 SO_4$)	28.1
Moomba	Killara	Potassium sulphate ($K_2 SO_4$)	12.8
Calga No. 1	Leichhardt ...	Iron oxide ($Fe_2 O_3$) and alumina ($Al_2 O_3$)	0.8
Wallon	Stapylton ...	Silica ($Si O_2$)	2.9
Momba	Killara	Calcium chloride ($Ca Cl_2$) and calcium sulphate ($Ca SO_4$)	22.2 & 12.0
Curraburra	Irrara	Total solid matter	396.9

1. This is, of course, not necessarily the salt found in greatest quantity.

The Zetz Spa, much used as a mineral water in New South Wales, comes from Ballimore, near Dubbo.

It may be said that the cost of artesian wells works out at an average of about 20s. per lineal foot; it depends, of course, upon the depth to which boring operations have to be extended, and on the accessibility of the bore to a railway station. Contracts have recently been let for boring and the use of six-inch casing at the following rates:—To 1000 feet, 16s. 6d. per foot; 1000 to 1500 feet, 18s. 3d.; 1500 to 2000 feet, 18s. 9d.; 2000 to 2500 feet, 19s. 9d.; 2500 to 3000 feet, 22s.; 3000 to 3500 feet, 25s.; 3500 to 4000 feet, 31s. To these prices must be added the cost of cartage and of finishing off the work.

3. **Victoria.**—Victoria lies altogether outside the great Australian artesian basin, and as water is obtainable in most parts of the State at shallow depths, there has not been much occasion for artesian boring. As early as 1884, however, an artesian well was bored at Sale, which for a number of years gave a supply of about 100,000 gallons per day until, either through corrosion of the casing or by choking up with sand from below, the flow ceased. In 1905 a new bore was therefore put down, which at a depth of 277 feet yielded sufficient water to fill Lake Guthridge, a local depression. But as the water was impure and contained too much sulphuretted hydrogen boring operations were continued to 520 feet, when the lowering of the casing shut off the supply of water. A second bore was then put down at some distance from the first, and this, at a depth of 238 feet, yielded fresh and clear water. The supply at present is stated to be about 145,000 gallons per day.

In 1906 eight bores were put down on the Overnewton Estate, Maribyrnong, to depths varying from 147 to 272 feet; small supplies of good and medium water for stock purposes were obtained, but only one of the wells yielded water fit for drinking purposes.

A supply of good underground water has recently been discovered in the Mallee country, opposite Pinnaroo, in South Australia, and a line of bores from the border to Kow Plains has proved the existence of a large sheet of underground water. The southernmost bore struck water at a depth of 190 feet, and the water rose to within 120 feet of the surface. Information as to the geological formation of this district is given on page 593 preceding.

4. **Queensland.**—The publication of the reports issued annually by the Hydraulic Engineer of Queensland has been suspended during the last eight years, and these reports are only available to 30th June, 1902. At that date the following bores were in existence :—

QUEENSLAND ARTESIAN BORES ON 30th JUNE, 1902.

Sunk by—	Artesian Flows.	Sub-Artesian Flows.	Pumped Supplies.	In Progress, Abandoned, Uncertain.	Total.
Water Supply Department (trial borings)	22	...	3	24	49
Railway Department	2	...	2	13	17
Local governing authorities	10	...	15	5	30
Private owners	530	9	131	168	838
Total ...	564	9	151	210	934

The depth of 850 of these wells is given, and it appears that there were 229 less than 500 feet deep, 200 from 500 to 1000 feet, 231 from 1000 to 2000 feet, 124 from 2000 to 3000 feet, and 66 over 3000 feet. The deepest well was one known as Bimerah Run No. 3, Whitewood, lying between the Barcoo and Thomson Rivers; this had a depth of 5045 feet, and was stated to yield 70,000 gallons daily. This flow is, of course, a comparatively small one, many wells yielding, when uncontrolled, from one to three million gallons a day. A well at Cunnamulla is stated to have a daily flow, when uncontrolled, of no less than 4,500,000 gallons. The waters of many of the wells have been analysed, and some found suitable for wool-scouring only, others are suitable for watering stock but not for irrigation, owing to the presence of alkali; others again serve for both stock and irrigation, while some, such as those containing sulphuretted hydrogen, are not of any use. Water fit for stock may generally be said to be "safe" for domestic purposes in spite of its slightly mineral taste. The wells yielding the mineral water known as "Helidon Spa," which is much in use in Queensland and New South Wales, are shallow wells from 60 to 200 feet in depth.

The following table shews particulars as to Queensland bores at the end of June, 1910 :—

QUEENSLAND ARTESIAN BORES ON 30th JUNE, 1910.

Bores Sunk by—	Artesian Flows.	Pumped Supplies.	In Progress, Abandoned or Uncertain.	Total.
Government	35	24	90	149
Local governing authorities ...	17	8	18	43
Private owners	706	330	352	1,388
Total	758	362	460	1,580

The total depth bored is stated at 1,644,400 feet, and the estimated continuous flow of water at 520,300,000 gallons per day. Of the 758 flowing bores 52 were yielding less than 10,000 gallons per day; 157 from 100,001 to 150,000 gallons; 312 from 150,001 to 750,000 gallons; 135 from 750,001 to 1,500,000 gallons; 63 from 1,500,001 to 2,500,000 gallons; and 39 from 2,500,001 to 4,000,000 gallons.

The maximum depth for Government wells is given as 4270 feet, and of private wells as 5045 feet, while the minimum depths were 250 feet and 60 feet respectively. The maximum and minimum temperatures of Government wells were 198° and 70° Fahrenheit, and of private wells 202° and 60° Fahrenheit.

5. **South Australia.**—The information about artesian wells is very defective. Early in 1908 a list of twenty-five of the principal Government bores was published, of which four were under 1000 feet in depth, twelve from 1000 to 2000 feet, two from 2000 to 3000 feet, and seven over 3000 feet. The deepest flowing well was at Goyder's Lagoon, on the Hergott to Birdsville route, measuring 4580 feet, and yielding 600,000 gallons per day. A bore at Patchawarra, 35 miles north of Innamincka, was in September, 1909, down to 4863 feet, but had not at that depth struck the subterranean water. As the temperature of the flow at Goyder's Lagoon is 208° Fahr., it is expected that the Patchawarra bore will yield water within a degree of boiling point. The maximum flows, viz., 1,250,000 gallons and 1,000,000 gallons daily, occurred at Coward Springs and Dulkaninna respectively. Information up to the end of the year 1909 is given, so far as available, in paragraph 1 (v.) hereof.

(i.) *Bores along Bordertown Railway.* The sinking of bores across the Ninety-mile Desert between the Murray and the Victorian boundary was commenced in 1886 at Coonalpyn; with the exception, however, of salt water at 55 ft., none was reported to have been struck. Ki Ki bore was sunk in 1887 and at 361 ft. a good supply of water fit for stock was struck. Tintinarra bore was sunk in 1887; it was artesian when first tapped. The water was found to be fit for locomotive engines and is still used for that purpose. The bore at Emu Flat was also sunk in 1887.

The following table gives particulars relating to bores along the Bordertown railway. In all these bores water was found in porous beds of Eocene (Tertiary) age.

SOUTH AUSTRALIA.—PARTICULARS OF BORES ALONG BORDERTOWN RAILWAY, 1910.

Bore.	Elevation of Surface above Sea-level	Depth of Water.	Depth of Water-level from Surface.	Quality; Salts and Matter per Gallon.	Supply per diem.	Remarks.
	Ft.	Ft.	Ft.		Gallons.	
Cooke's Plains	17	15	...	Salt	...	Bottomed granite, 218 feet.
Ki Ki ...	68	73 361	68	Brackish	16,800 16,800	Bottomed decomposed slates, 450 ft.
Tintinarra ...	62	251	(Rises to surface).	Fresh (81 grs.)	4,300	...
Emu Flat ...	100	52	28	Fresh (98 grs.)	8,500	At 60 ft. from surface 312,000 gals. per diem.
Keith		166 264				

(ii.) *Bores along and near Pinnaroo Railway Line.* The subjoined table gives particulars of some of the principal bores in the Pinnaroo country. In 1904 the first bore was sunk in this district at Cotton; numerous successful bores have since been put down by the Department, and subsequently by the residents of the district. Several wells, ranging in depth from 55 ft. to 221 ft., have also been sunk in this district:—

SOUTH AUSTRALIA.—PARTICULARS OF PRINCIPAL BORES NEAR PINNAROO RAILWAY LINE, 1910.

Bore.	Elevation of Surface above Sea Level.	Depth of Water.	Depth of Water Level from Surface.	Quality.	Salts per Gallon.	Supply per diem where ascertained.
	Feet.	Feet.	Feet.		Grains.	Gallons.
Sherlock ...	53	270	15	Fresh	196.24	...
Geranium ...	240	140	140	"	96.05	14,400
Cotton ...	300	190 and 800	170	"	81.16	30,000*
Parilla ...	340	207 and 250	207	"	...	...
Bews ...	350	227	193	"	...	10,800
Clay Pan ...	340	225	203	"	...	13,440
Kow Plains...	344	140 and 210	167	"	73.79	...
Fuller ...	100	72 and 340	43 and 29	Brackish / Fresh	101	...
Gosden ...	100	327	27	Fresh	...	48,000

* Bottomed on granite at 839 feet.

The latest Government bore is situated 7½ miles south of Brown's well, near the terminus of the proposed railway from Tailem Bend. The depth of this bore is 220 ft., and the water, which is in large supply, rises to within 52 ft. of the surface. The water is fresh, containing ¼ oz. salts and other solid matter per gallon.

6. **Western Australia.**—As already stated, no artesian water has been found east of the Darling Range, although a large number of shallow bores yield either fresh or salt water.

At the end of the year 1909 the total number of bores west of the Darling Range was 80, of which 49 were Government bores. The total depth bored is given as 57,370 feet in Government and 30,896 feet in private bores. The total cost of State bores was about £94,000, of which amount £20,226 was spent in 1909. The total daily flow of the Government bores is stated as 15,437,028 gallons, and of private bores as 11,067,800 gallons. The maximum and minimum depths of State bores were 3011 feet and 56 feet respectively, and the maximum and minimum temperatures 140° and 60° Fahrenheit. The maximum outflow, 1,167,000 gallons per day, is said to be obtained from a well at Guildford.

§ 3. Irrigation Plants.

1. **General.**—Various causes have combined to keep proposals for irrigation works on a large scale before the Parliaments of several of the States for a number of years without any very tangible results, except in the case of New South Wales, Victoria, and South Australia. The absence of the example of any country which has constructed such works under similar climatic and labor conditions, the very partial success of some of the smaller works undertaken in Australia, and the abundant supply of artesian water obtained during the last twenty years in parts of the continent most liable to droughts, have all tended to delay the undertaking of large works.

2. **New South Wales.**—(i.) *Irrigation Trusts.* The first action by the Government of this State for the establishment of irrigation settlements was taken under Acts of Parliament, which set apart and authorised the formation of irrigation trusts in the vicinity of Wentworth in 1890, Hay in 1892, and Balranald in 1893. The Wentworth Trust controlled an area of 10,600 acres, but has been dissolved and its powers assumed

by Government. A pumping plant has been provided and channels laid out for the irrigation of an area of 1500 acres, of which 1000 acres are at the present time under successful occupation, largely for the production of horticultural crops and a small amount of lucerne. The original area under the Hay Trust was 12,847 acres, but in 1896 this was reduced to 3000 acres. The pumping plant and channels provide for the irrigation of 900 acres, which are under occupation, principally in connection with the growth of fodder crops for dairying, a small area being under horticultural crops. No works for the supply of water have yet been carried out by the Balranald Trust, which controls an area of 1000 acres. It is improbable that any irrigation will be provided in this area in the near future.

(ii.) *Private Irrigation Works.* The most extensive private irrigation works in the State are those at North Yanko, which take their water from Cudgell Creek, a tributary of the Murrumbidgee.

(iii.) *The Murrumbidgee Northern Irrigation Scheme.* This scheme provides for the utilisation of a large proportion of the waters flowing from the Murrumbidgee catchment area in normal seasons. The works which are necessary to provide for the conservation of these waters consist in the first place of a large storage reservoir in which the water is to be retained by a weir known as the "Barren Jack Dam." This dam is being constructed across the channel of the Murrumbidgee River, about three miles below the confluence of the Goodradigbee River. The catchment area above this point is 5000 square miles.

The retaining wall will have a total height of 240 feet from its crest to the deepest foundation level; the total length will be 784 feet curved in plan to a radius of 1200 feet; the thickness at the crest will be 18 feet and at the base 170 feet. The maximum depth of the water stored will be 224 feet, the total volume being 33,630 million cubic feet. The wall itself will contain about 600,000 tons of material, and will require about 50,000 tons of cement for its construction. The work is now partially completed and it is estimated that it will be finished in 1913. The object of constructing this weir is to regulate the supply of water, so that the large volumes which are afforded by the winter rains and the melting snows of the spring may be retained and made available to supplement the natural flow of the river in the dry months of the summer, when irrigation water is most required. The volumes of water thus made available for irrigation requirements will be conveyed in the channel of the Murrumbidgee River for a distance of 200 miles from the storage to a point above the town of Narrandera at Berembed, where a reservoir known as the Berembed Weir is in course of construction with the object of diverting supplies by gravitation into the irrigation lands. A main canal, capable of carrying 1000 cubic feet per second, is being constructed from the Berembed weir for the purpose of conveying the waters to the irrigable lands situated along the base of the hills to the west of the town of Narrandera.

It is proposed that the State Government shall acquire and sub-divide for the purposes of intense culture the whole of these irrigable areas, which consist of about 200,000 acres of first-class and 360,000 acres of second-class land. The main canal will be capable of carrying to these areas only about one half of the water which will be made available for irrigation by the construction of the Barren Jack dam. No determination has yet been arrived at as to whether the additional available volumes will be utilised for irrigating further areas of these same lands on the northern side of the river, or whether a separate canal will be constructed for the purpose of carrying supplies to lands on the southern side.

It is stated that the conditions as regards water-supply, soil, and climate are such as to ensure the success of the scheme, and it is anticipated that when the whole of the lands are settled there will be an addition of at least 50,000 people to the population within the district. It is expected that, in addition to the horticultural crops which will be grown, the supplies of fodder which will be afforded by the irrigation settlement will be sufficient to obviate the evil effects of droughts in the surrounding pastoral districts and will thus largely increase their stock-carrying capacity and productiveness.

(iv). *Other Irrigation Schemes.* The following proposals are under investigation by the State Irrigation Department :—

(*a*) *Lachlan River.* The construction of a storage reservoir on this river at a place known as Wyangala, below the confluence of the Abercrombie River, for the purpose of affording water in the river channel for pastoral purposes and for the irrigation of small areas along the river banks by pumping.

(*b*) *Macquarie River.* The construction of a storage reservoir on this river at Burrendong below the confluence of the Cudgegong River, for the purpose of affording water by gravitation for the irrigation of certain lands to the west of Narromine.

(*c*) *Murray River.* The construction of a storage reservoir across the Murray River at Camberoona, above Albury, in order to supply water by gravitation through a canal which will be taken off at Bungowannah, below Albury, for the irrigation of high-class lands lying between the Murray and the Billabong Creek near the town of Berrigan.

(*d*) *Hunter River.* The construction of storage reservoirs on the Upper Hunter and Goulburn Rivers with a view to supplying water by pumping from the Hunter River to the adjoining lands. It is stated that the valley of this river is one of the most fertile districts in the State and that it is capable of carrying a dense population under the conditions of intense culture by irrigation.

(*e*) *Darling River.* The conversion of Lake Menindie into a large permanent storage by means of a diversion weir across the Darling River and of a canal through Lake Pamamaroo, the water so stored to be utilised in the irrigation of the bed of Lake Carondilla and of certain lands to the south-west.

(*f*) *Warragamba River.* A scheme has been prepared for the construction of a large storage dam on the Warragamba River, so as to retain a depth of 225 feet and a volume of 103,000 million gallons of water. This would be available for the supply of 80 million gallons daily for the domestic services of Sydney, 30 million gallons daily for trade purposes, and 80 million gallons daily for irrigation purposes in the county of Cumberland.

It is proposed that the water for domestic purposes should be conveyed and delivered at Potts Hill through 48 miles of open concrete channel and pipes; that the supplies for trade purposes should be delivered in the vicinity of the Great Western Railway, between St. Mary's and Penrith; and that the lands situated along the banks of the Nepean River and in the valley of South Creek should be irrigated.

3. **Victoria.**—(i.) *Classification of Works.* The Water Conservation Works in Victoria naturally divide themselves into those providing mainly a domestic supply, such as the Yan Yean works, controlled by the Melbourne and Metropolitan Board of Works; the Coliban, Broken River, Kerang Lakes, and Mallee Supply Works, which, although now administered by the State Rivers and Water Supply Commission, are properly local government works; other works for domestic supply controlled by Water Works Trusts or Municipal Corporations; and irrigation works proper. With the exception of the last named class particulars as to these works will be found in the section on "Local Government" of this book.

(ii.) *Works Controlled by the Commission.* With the exception of the First Mildura Irrigation and Water Supply Trust, all of the irrigation schemes and the more important domestic and stock water-supply works in rural districts are vested in and controlled by

the State Rivers and Water Supply Commission, which was created by the Water Act 1905, in force since 1st May, 1906. The works under the control of this body, which is composed of three members, may be classified as follows:—(*a*) Town supplies. (*b*) Irrigation schemes, and (*c*) Domestic and stock schemes. The following statement shews the capital cost of each class of works under the control of the commission:—

VICTORIA.—COST OF WORKS UNDER CONTROL OF STATE RIVERS AND WATER SUPPLY COMMISSION, 1909.

Particulars.	Town Supplies.	Irrigation Schemes.	Domestic and Stock Schemes.	Miscellaneous.	Total.
Capital cost ... £	2,100,000	2,830,000	790,000	64,000	5,784,000

(*a*) *Town Supplies.* This division embraces the Coliban (Bendigo and several other towns) supply which has cost £1,200,000, and the Ballarat scheme installed at a cost of £351,000. The balance of the amount specified above has been expended on schemes for the supply of about 122 provincial and country towns. The Melbourne and Geelong works were also originally constructed or partly constructed by the State, but the schemes have been purchased from the Government by the local Boards which now control them. The Coliban system, in addition to the schemes for about twelve other towns, is administered by the State Rivers and Water Supply Commission. The remaining town supplies are managed by local Trusts which have obtained the necessary moneys therefor on loan from the State.

(*b*) *Irrigation Schemes.* The second division comprises the schemes constructed and under construction for the supply of water to between twenty to thirty irrigation districts. Up to 1906 these schemes were controlled by local Trusts which had obtained the moneys for the construction on loans borrowed from the State. By the Water Act 1905 all local control was abolished and the districts were transferred to the State Rivers and Water Supply Commission. Since this date the Government has adopted a vigorous irrigation policy and the expenditure on construction during the past three years amounts to £1,000,000. The irrigation works draw their supplies mainly from headworks constructed on the Murray, Goulburn, and Loddon rivers. The cost of these works, which now stands at £1,082,000, is not debited to the districts benefited but is borne entirely by the State. Within the last two years the State has adopted the policy of purchasing large areas of land commanded by these schemes and subdividing them for intensive culture. The settlement of the areas on these lines will mean a large increase in the population of the State.

(*c*) *Domestic and Stock Schemes.* The third division takes into account the schemes constructed and under construction for the supply of water for domestic and stock purposes to very large tracts of country. The principal works of this division are situated in the Wimmera and Mallee districts. and cover an area of about 6000 square miles. The loan expenditure in 1909 within this area amounted to between £40,000 and £50,000, while for 1910 it is estimated that the expenditure will amount to over £70,000. In addition to the Commissions' districts some large areas are still administered by local authorities.

It should be mentioned that in 1899 the State deemed it advisable to write-off the sum of £1,073,000 from capital accounts of the local bodies then controlling the works in each of the above divisions.

(iii.) *Mildura.* The first settlement of Mildura dates from 1884. After being managed until 1887 by Chaffey Bros., and then until 1895 by Chaffey Bros. Company Limited, it was in that year taken over by the First Mildura Irrigation Trust and has

since then made great progress. Its population, which at the Census of 1891 was 2321, has increased to about 5000. The exports of dried and canned fruit from Victoria, nearly all of which came from Mildura, amounted in 1909 to £173,785, viz.:—Canned fruits, £54,014; dried fruits—raisins, £84,548; other, £35,223. Of these exports £162,318 worth were sent to the other States of the Commonwealth, chiefly New South Wales, and Queensland, while the balance of £11,467, of which raisins accounted for £5099, was exported oversea.

No precise figures are available as to the capital cost of the works at Mildura; probably the sum was not less than £180,000. The amount due to Government is £67,382, exclusive of £16,851 for accumulations of interest.

(iv.) *Area Irrigated.* The area of country lands within the State artificially supplied with water for domestic and ordinary use and for watering stock is 16,975 square miles, equal to 10,864,000 acres. The extent of land under irrigated culture for all kinds of crop is 129,771 acres, a decrease of 47,102 acres compared with the area irrigated in 1908-9. Last year, however, the usual supply was not available for the districts supplied from the Loddon River Works on account of the breaking of the Laanecoorie Weir. Of this area, 23,715 acres were under cereals, 24,124 acres under lucerne and other permanent fodder crops, 8094 acres under sorghum and other annual fodder crops, 50,541 acres under pasture, 17,524 acres (of which 9609 acres at Mildura) were vineyards, orchards, and gardens, while the balance of 5773 acres was in fallow, etc.

(v.) *The Trawool Scheme.* A project was mentioned some time ago of constructing a weir across the Upper Goulburn river at the Trawool Gorge, in the neighbourhood of Seymour. If this scheme should ever be carried out, the weir would have to be about 1700 feet long, and at the deepest part of the river 140 feet high. It was expected that the weir would impound water for about twenty miles upstream, and that it would provide a reservoir of a capacity of 60,000 million cubic feet. About 20,000 acres of gullies and river flats would be permanently submerged. The cost was estimated at about £1,500,000. This would make it by far the largest reservoir in existence, the Assouan dam only holding 35,840 million cubic feet, while the capacity of the Waranga basin amounts to 8811 million cubic feet. The Barren Jack reservoir, now in course of construction, in New South Wales, will, with water of a maximum depth of 224 feet, hold 33,630 million cubic feet. For the present the Trawool scheme remains, however, in abeyance.

4. **Queensland.**—The main irrigation works in Queensland are as follow:—(*a*) those at Ayr, which utilise the waters of the Burdekin River, and shallow wells on its banks; (*b*) those at Bingera, near Bundaberg, which utilise water pumped from the Burnett River just above the point of meeting of the salt and fresh waters, and (*c*) those at Fairymead, which utilise water pumped from a number of shallow spear wells sunk on the alluvial flats on the north side of the Burnett River and about six miles from Bundaberg. Apart from the persons benefiting from the two schemes mentioned, there were said to be not more than 363 irrigators in 1909, chiefly farmers and graziers, in the State.

5. **South Australia.**—(i.) *The Renmark Irrigation Trust.* The Renmark Irrigation Trust was established on similar lines to Mildura, but on a considerably smaller scale. At present the land assessed for the purpose of the trust measures about 3600 acres, and maintains a population of about 1000. The export of Renmark products averages about £35,000 per annum. It is claimed that without irrigation the land would barely feed 500 sheep.

(ii.) *Other Waterworks.* The Bundaleer reservoir consists in a large earth and clay embankment which impounds water in a natural basin away from the main water-courses. Its capacity is stated as 1,319,000 gallons.

The Barossa waterworks have a reservoir wall of concrete seventy-five feet in height. The reservoir has a holding capacity of 993,340,000 gallons.

A reservoir, the first in the northern part of the State, was completed at the end of 1909 on Pekina Creek, above Orroroo.

The largest of the South Australian undertakings is the Beetaloo waterworks, which command the towns of Port Pirie, Moonta, Wallaroo, Kadina, and fifteen others, besides one million acres of country lands. The cast-iron reticulation pipes in connection with Beetaloo are 637 miles in length, and the capital cost of the works was £989,950.

None of the South Australian works, Renmark excepted, are, however, irrigation works properly so called, although they are to some extent used for irrigation purposes.

(iii.) *Area under Irrigation.* The area under irrigation in South Australia, including reclaimed lands along the Murray, amounted to only 20,000 acres at the beginning of 1911. The Government, however, proposes to push on with the irrigation schemes along the Murray as fast as possible. The Cobdogla station, held under grazing permits, will be the next area taken in hand, and notice for the resumption of 118 square miles has been given to the present occupiers. The area comprises practically the whole of the original Lake Bonney irrigation scheme, and is contiguous to the Berri irrigation area, which contains a further 19,000 acres of the Cobdogla run. It is proposed to start the reticulation with channels for an area of 5000 acres, between the Cobdogla homestead and Lake Barmera (formerly Lake Bonney), which lends itself to economical irrigation. A large central pumping station will be erected at the south end of the lake, and will command the whole of the irrigation area, including the 5000 acres, the maximum lift being about 90 feet.

6. **Conflicting Interests.**—The relative rights of the States of New South Wales, Victoria, and South Australia to the waters of the Murray River are undetermined. Territorially the south bank of the Murray was the boundary between the two former States, *i.e.*, the region of the river itself, up to the point where it enters South Australia, was wholly within New South Wales.

At the Federal conventions which preceded the establishment of the Commonwealth the South Australian representatives expressed their fear lest too much irrigation on the Murray and Darling might impair the navigability of the latter river, and the result was the insertion of a provision in the Commonwealth Constitution which reads as follows:—

"*Section 100.*—The Commonwealth shall not, by any law or regulation of trade or commerce, abridge the right of a State or the residents therein to the reasonable use of the waters of rivers for conservation and irrigation."

Under this section negotiations have for several years been in progress between the three interested States. In January, 1911, a conference took place in Melbourne between the Premiers of New South Wales, Victoria, and South Australia on the Murray Water question. One of the primary objects of this Conference was to discuss the provision in the Murray Works Act, passed by the South Australian Government in 1910, authorising the carrying out of certain works at Lake Victoria in New South Wales subject to an agreement being made for the acquisition by South Australia of the Lake together with the two watercourses, known as Rufus River and Frenchman's Creek, connecting the River Murray with the Lake. The Premier of South Australia claimed the right to have enough water sent down the river to maintain navigation, and also asserted a right to the waters flowing down the Goulburn in Victoria, and the Murrumbidgee in New South Wales, into the Murray, as well as to the waters of the Murray itself, not only for navigation, but also for the irrigation purposes contemplated by the Government of South Australia. In support of the navigation proposal it was stated that South Australia had in view a scheme for cutting a canal from the Murray to Victoria Harbour,

with harbour improvements, etc., which altogether would cost a million sterling. Briefly stated, the results of the conference were that South Australia was to be allowed to carry out storage works at Lake Victoria, New South Wales, and lock her own portion of the Murray at her own expense, but New South Wales and Victoria would not recognise the claims of navigation in any way, and would not bind themselves to deliver any quantity of water at the point of intake into South Australia. No rights to navigation were conceded by New South Wales and Victoria, and the upper portions of the river were left free for irrigation. The storage works which the South Australian Government proposes to construct at Lake Victoria will cost about £162,000, and the total scheme, which will include the construction of at least five locks, will cost between £600,000 and £700,000. It is estimated that as the result of the storage works 22,000,000,000 cubic feet of water can be impounded in Lake Victoria. It is stated that there will be no difficulty in filling the Lake in the winter months.

SECTION XV.

COMMERCE.

§ 1. Introductory.

1. **General.**—The development of the commerce of Australia might be considered from several standpoints—for example, the historical, the legal, or the purely financial—all of which are important.

The importance of the subject demands a reference to the constitutional power of the Commonwealth in respect to commerce and to the various Acts which have been passed in the exercise of that power, since these profoundly affect its trade and commerce.

In setting out the statistics of commerce regard will be had to the significant features of its development, both from the historical and financial point of view.

2. **Constitutional Powers of Commonwealth in regard to Commerce.**—Under the provisions of the Commonwealth Constitution Act [*vide* pp. 38 to 45 of this volume] power to make laws with respect to "trade and commerce with other countries and among the States" is vested in the Commonwealth Parliament. [Chap. I., Part V., sec. 51 (i.), *vide* p. 39.]

The Constitution Act further provides in relation to trade that:—

"On the establishment of the Commonwealth, the collection and control of duties of customs and of excise, and the control of the payment of bounties, shall pass to the Executive Government of the Commonwealth." [Section 86.]

"Uniform duties of customs shall be imposed within two years after the establishment of the Commonwealth." [Section 88.]

"On the imposition of uniform duties of customs the power of the Parliament to impose duties of customs and of excise, and to grant bounties on the production or export of goods, shall become exclusive.

"On the imposition of uniform duties of customs all laws of the several States imposing duties of customs or of excise, or offering bounties on the production or export of goods, shall cease to have effect, but any grant of or agreement for any such bounty lawfully made by or under the authority of the Government of any State shall be taken to be good if made before the thirtieth day of June, one thousand eight hundred and ninety-eight, and not otherwise." [Section 90.]

"Nothing in this Constitution prohibits a State from granting any aid to or bounty on mining for gold, silver, or other metals, nor from granting, with the consent of both Houses of the Parliament of the Commonwealth expressed by resolution, any aid to or bounty on the production or export of goods." [Section 91.]

"On the imposition of uniform duties of customs, trade, commerce, and intercourse among the States, whether by means of internal carriage or ocean navigation, shall be absolutely free." [Section 92, 1st paragraph].

"The power of the Parliament to make laws with respect to trade and commerce extends to navigation and shipping, and to railways the property of any State." [Section 98.]

"The Commonwealth shall not, by any law or regulation of trade, commerce, or revenue, give preference to one State or any part thereof over another State or any part thereof." [Section 99.]

"The Commonwealth shall not, by any law or regulation of trade or commerce, abridge the right of a State or of the residents therein to the reasonable use of the waters of rivers for conservation or irrigation." [Section 100.]

"There shall be an Interstate Commission, with such powers of adjudication and administration as the Parliament deems necessary, for the execution and maintenance, within the Commonwealth, of the provisions of this Constitution relating to trade and commerce, and of all laws made thereunder." [Section 101.]

"The Parliament may by any law with respect to trade or commerce forbid, as to railways, any preference or discrimination by any State, or by any authority constituted under a State, if such preference or discrimination is undue and unreasonable or unjust to any State; due regard being had to the financial responsibilities incurred by any State in connection with the construction and maintenance of its railways. But no preference or discrimination shall, within the meaning of this section, be taken to be undue and unreasonable, or unjust to any State, unless so adjudged by the Interstate Commission." [Section 102.]

"The members of the Interstate Commission—

(i.) Shall be appointed by the Governor-General in Council;

(ii.) Shall hold office for seven years, but may be removed within that time by the Governor-General in Council, on an address from both Houses of the Parliament in the same session praying for such removal on the ground of proved misbehaviour or incapacity;

(iii.) Shall receive such remuneration as the Parliament may fix; but such remuneration shall not be diminished during their continuance in office." [Section 103.]

"Nothing in this Constitution shall render unlawful any rate for the carriage of goods upon a railway, the property of a State, if such rate is deemed by the Interstate Commission to be necessary for the development of the territory of the State, and if the rate applies equally to goods within the State and to goods passing into the State from other States." [Section 104.]

Provisions of a temporary nature and which have now ceased to operate were also made as follows:—

"But notwithstanding anything in this Constitution, goods imported before the imposition of uniform duties of customs into any State, or into any colony which, whilst the goods remain therein, becomes a State, shall, on thence passing into another State within two years after the imposition of such duties, be liable to any duty chargeable on the importation of such goods into the Commonwealth, less any duty paid in respect of the goods on their importation." [Section 92.]

"Notwithstanding anything in this Constitution, the Parliament of the State of Western Australia, if that State be an original State, may, during the first five years after the imposition of uniform duties of customs, impose duties of customs on goods passing into that State and not originally imported from beyond the limits of the Commonwealth; and such duties shall be collected by the Commonwealth.

"But any duty so imposed on any goods shall not exceed during the first of such years the duty chargeable on the goods under the law of Western Australia in force at the imposition of uniform duties, and shall not exceed during the second, third, fourth, and fifth of such years respectively, four-fifths, three-fifths, two-fifths, and one-fifth of such latter duty, and all duties imposed under this section shall cease at the expiration of the fifth year after the imposition of uniform duties.

"If at any time during the five years the duty on any goods under this section is higher than the duty imposed by the Commonwealth on the importation of the like goods, then such higher duty shall be collected on the goods when imported into Western Australia from beyond the limits of the Commonwealth." [Section 95.]

§ 2. Commonwealth Commercial Legislation.

1. **Customs Act 1901 (No. 6 of 1901).**—"An Act relating to the Customs," assented to on the 3rd October, 1901, came into operation by proclamation on the 4th October, 1901. This provided for the establishment of the necessary administrative machinery for all matters pertaining to the customs, and prescribed, *inter alia*, the manner in which customs duties shall be computed and paid. It does not, however, determine the rates thereof.

During the interval between the inception of the Commonwealth, viz., on 1st January, 1901, and the coming into operation of the Customs Act 1901, the Customs Acts of the several States were administered by the Executive Government of the Commonwealth, under section 86 of the Constitution.

2. **Customs Tariff Act 1902 (No. 14 of 1902).**—The first Commonwealth Customs Tariff imposing uniform rates of customs duty in all the States was introduced in the House of Representatives on the 8th October, 1901. "An Act relating to Duties of Customs," assented to on the 16th September, 1902, made provision that uniform duties of customs specified in the tariff schedule should be imposed from the 8th October, 1901, at four o'clock in the afternoon, reckoned according to the standard time in force in the State of Victoria. From this time onwards trade between the States became free, with, however, the exception, under section 95 of the Constitution Act, of the right of Western Australia to levy duty on the goods from other States. [Repealed by the Customs Tariff Act 1908 (No. 7 of 1908.)]

3. **Sea Carriage of Goods Act (No. 14 of 1904).**—"An Act relating to the Sea Carriage of Goods," assented to on the 15th December, 1904, to commence on the 1st January, 1905, provides that—"Where any bill of lading or document contains any clause, covenant or agreement whereby (*a*) the owner, charterer, master, or agent of any ship or the ship itself, is relieved from the liability for loss or damage to goods arising from the harmful or improper condition of the ship's hold, or any other part of the ship in which goods are carried, or arising from negligence, fault, or failure in the proper loading, stowage, custody, care, or delivery of goods received by them or any of them to be carried in or by the ship; or (*b*) any obligations of the owner or charterer of any ship to exercise

due diligence and to properly man, equip, and supply the ship, to make and keep the ship seaworthy, and to make and keep the ship's hold, refrigerating and cool chambers, and all other parts of the ship in which goods are carried, fit and safe for their reception, carriage, and preservation, are in any wise lessened, weakened, or avoided; or (*c*) the obligations of the master, officers, agents, or servants of any ship to carefully handle and stow goods, and to care for, preserve, and properly deliver them, are in any wise lessened, weakened, or avoided; that clause, covenant, or agreement shall be illegal, null and void, and of no effect.

"In every bill of lading with respect to goods a warranty shall be implied that the ship shall be, at the beginning of the voyage, seaworthy in all respects and properly manned, equipped, and supplied.

"In every bill of lading with respect to goods, unless the contrary intention appears, a clause shall be implied whereby, if the ship is at the beginning of the voyage seaworthy in all respects and properly manned, equipped, and supplied, neither the ship nor her owner, master, agent, or charterer shall be responsible for damage to or loss of the good resulting from (*a*) faults or errors in navigation; or (*b*) perils of the sea or navigable waters; or (*c*) acts of God or the King's enemies; or (*d*) the inherent defect, quality, or vice of the goods; or (*e*) the insufficiency of package of the goods; or (*f*) the seizure of the goods under legal process; or (*g*) any act of omission of the shipper or owner of the goods, his agent, or representative; or (*h*) saving or attempting to save life or property at sea; or (*i*) any deviation in saving or attempting to save life or property at sea."

4. **Secret Commission Act 1905 (No. 10 of 1905).**—"An Act relating to Secret Commissions, Rebates, and Profits," assented to on the 16th November, 1905, provides that—"Any person who, without the full knowledge and consent of the principals directly or indirectly, (*a*) being an agent of the principal, accepts or obtains, or agrees or offers to accept or obtain, for any person, for himself, or for any person other than the principal; or (*b*) gives or agrees to give or offers to the agent of a principal, or to any person at the request of an agent of the principal, any gift or consideration as an inducement or reward for any act done or to be done, or any forebearance observed or to be observed, or any favour or disfavour shewn or to be shewn in relation to the principal's affairs or business, or on the principal's behalf, or for obtaining or having obtained, or aiding or having aided to obtain for any person an agency or contract for or with the principal, shall be guilty of an indictable offence.

"Any person who (*a*) gives to an agent; or (*b*) being an agent receives or uses, with intent to deceive the principal, any receipt, account, or document in respect of which the principal is interested or in relation to a dealing, transaction, or matter in which the principal is interested, the receipt account, or document being false, erroneous, or defective in any material particular, or likely in any way to mislead the principal, shall be guilty of an indictable offence.

"Any agent who, without the full knowledge and consent of the principal, buys from or sells to himself, or any firm of which he is a partner, or any company of which he is a director, manager, officer, or employee, or in which he or any person for him or on his behalf is a shareholder, any goods for or on behalf of his principal, shall be guilty of an indictable offence.

"Whoever aids, abets, counsels, or procures, or is in any way directly or indirectly knowingly concerned in or privy to (*a*) the commission of any offence against this Act; or (*b*) the commission outside Australia of any act, in relation to the affairs or business or on behalf of a principal residing in Australia, which, if committed in Australia, would be an offence against this Act, shall be deemed to have committed the offence and be punishable accordingly.

"This Act applies to trade and commerce with other countries and among the States, and to agencies of and contracts with the Commonwealth or any department or officer thereof."

5. **Commerce (Trade Descriptions) Act 1905 (No. 16 of 1905).**—"An Act relating to Commerce with other Countries," assented to on the 8th December, 1905, and brought into operation by proclamation on the 8th June, 1906, gives power to compel the placing of a proper description on certain prescribed goods, or on packages containing the same, being imports or exports of the Commonwealth. In this Act, unless the contrary intention appears, "trade description" in relation to any goods, means any description, statement, indication, or suggestion, direct or indirect, "(*a*) as to the nature, number, quantity, quality, purity, class, grade, measure, gauge, size, or weight of the goods; or (*b*) as to the country or place in or at which the goods were made or produced; or (*c*) as to the manufacturer or producer of the goods or the person by whom they were selected, packed, or in any way prepared for the market; or (*d*) as to the mode of manufacturing, producing, selecting, packing, or otherwise preparing the goods; or (*e*) as to the material or ingredients of which the goods are composed, or from which they are derived; or (*f*) as to the goods being the subject of an existing patent privilege, or copyright, and includes a customs entry relating to goods; and any mark which, according to the custom of the trade or common repute, is commonly taken to be an indication of any of above matters, shall be deemed to be a trade description within the meaning of this Act.

" 'False trade description' means a trade description which, by reason of anything contained therein or omitted therefrom, is false or likely to mislead in a material respect as regards the goods to which it is applied, and includes every alteration of a trade description, whether by way of addition, effacement, or otherwise, which makes the description false or likely to mislead in a material respect."

The operation of the Act is restricted to the following classes of goods:—(*a*) Articles used for food or drink by man, or used in the manufacture or preparation of articles used for food or drink by man; or (*b*) medicines or medicinal preparations for internal or external use; or (*c*) manures; or (*d*) apparel (including boots and shoes), and the materials from which such apparel is manufactured; or (*e*) jewellery; or (*f*) seeds and plants.

6. **Australian Industries Preservation Act 1906 (No. 9 of 1906).**—"An Act for the Preservation of Australian Industries and for the Repression of Destructive Monopolies," assented to 24th September, 1906, provides that any person or any corporation making or engaging or continuing in any combination "with intent to restrain trade or commerce to the detriment of the public or with intent to destroy or injure by means of unfair competition any Australian industry the preservation of which is advantageous to the Commonwealth, having due regard to the interests of the producers, workers, or consumers," or any person or corporation monopolising or attempting or conspiring to monopolise any part of the trade of the Commonwealth with intent to control, to the detriment of the public, the supply or price of any service, merchandise, or commodity, is guilty of an offence. (Amended, see Acts No. 5 of 1908 and No. 26 of 1909-1910.)

7. **Customs Tariff 1906 (No. 14 of 1906).**—"An Act relating to Duties of Customs" amends the Customs Tariff of 1902 in relation to the duties on harvesters and agricultural implements and machinery and prescribes the prices to be the maximum prices of Australian harvesters and drills delivered to the purchaser at the railway station or port nearest to the factory where they are made. [Repealed by Customs Tariff Act 1908 (No. 7 of 1908.)]

8. **Customs Tariff (South African Preference) 1906 (No. 17 of 1906).**—"An Act relating to Preferential Duties of Customs on certain goods the produce or manufacture of the British Colonies or Protectorates in South Africa which are included within the South African Customs Union," assented to 12th October, 1906, to operate from 1st October, 1906, provides for special preferential rates of duty on certain goods imported from and being the produce of any of the Colonies or Protectorates included within the South African Customs Union.

9. **Australian Industries Preservation Act 1907 (No. 5 of 1908).**—"An Act to amend the Australian Industries Preservation Act 1907," assented to 14th April, 1908, provides additional machinery for procuring evidence of offences against the principal Act.

10. **Customs Tariff 1908 (No. 7 of 1908).**—"An Act relating to Duties of Customs," assented to 3rd June, 1908, repeals Section 5 of the Customs Tariff 1902 (No. 14 of 1902) and the schedule of that Act and the whole of the Customs Tariff 1906 (No. 14 of 1906) as from 8th August, 1907, at 4 o'clock in the afternoon, reckoned according to the standard time in the State of Victoria,[1] and imposes new rates of Customs Duties from that time. This Act provides preference rates of customs duties on certain "goods the produce or manufacture of the United Kingdom which are shipped in the United Kingdom to Australia and not transhipped, or if transhipped then only if it is proved to the satisfaction of the Collector (of customs) that the goods have not, since they were shipped in the United Kingdom, been subjected to any process of manufacture."

11. **Customs Tariff Amendment 1908 (No. 13 of 1908).**—"An Act to amend the Tariff Act of 1908," assented to 10th June, 1908, provides that where the rate of duty to be paid on goods the produce or manufacture of the United Kingdom is not set out in the Customs Tariff 1908, and where such goods are not expressly declared to be free, the "General Tariff" rates shall apply. This Act also provides that no higher duty shall be payable under the South African Preference Act 1906, than the duty under the General Tariff of the Customs Tariff 1908, and that no duty shall be payable under that Act on any goods which are free of or exempt from duty under the General Tariff of the Customs Tariff 1908. The purpose of this Act is merely to remove possible doubt as to the intention of the original Acts.

12. **Australian Industries Preservation Act 1909 (No. 26 of 1909).**—"An Act to amend the Australian Industries Preservation Acts 1906-1907" formally repeals Sections 5 and 8 of the parent Act, which were declared by the High Court to be *ultra vires*; also provides that, in relation to trade and commerce with other countries or among the States, the payment of rebates, or the refusal to sell, "either absolutely or except upon disadvantageous conditions," with the purpose of promoting exclusive dealing, shall be an offence.

13. **Customs (Interstate Accounts) Act 1910 (No. 9 of 1910).**—Repeals Sections 272 and 273 of the Customs Act 1901. These sections relate to the passing of dutiable goods from one State to another State of the Commonwealth and their repeal was consequent on the termination of the book-keeping system of accounts between the Commonwealth Government and the Governments of the States in favour of a system of payments based on population.

14. **Australian Industries Preservation Act 1910 (No. 29 of 1910).**—An Act to amend the Australian Industries Preservation Act 1906-1909. This Act removes from the principal Act the obligation to prove *intent* to restrain trade and detriment to the public.

15. **Customs Act 1910 (No. 36 of 1910).**—An Act to amend the Customs Act 1901 gives the Customs control of all goods for export, the exportation of which is subject to compliance with any condition or restriction under any Act or regulation, extends the machinery provisions for the prevention of the importation or exportation of goods which are prohibited imports or exports respectively, amends the provisions for the payment of duty under protest, gives the Governor-General power to prescribe the nature, size, and material of the coverings for packages, and the maximum or minimum weight or quantity to be contained in any one package of goods imported or exported, or trans-

1. "Standard time" is identical in the States of New South Wales, Victoria, Queensland, and Tasmania.

ported coastwise from one State to another; the condition of preparation or manufacture for export of any articles used for, or in the manufacture of, food or drink by man; the conditions as to purity, soundness, and freedom from disease to be conformed to by goods for export.

16. **Customs Tariff 1910 (No. 39 of 1910).**—An Act relating to duties of Customs, amends the Customs Tariff of 1908 by more explicit definition of certain tariff items, and by alteration of some rates of duty.

§ 3. Method of Recording Imports and Exports.

1. **Value of Imports.**—The recorded value of goods imported from countries beyond the Commonwealth represents the amount on which duty is payable or would be payable if the duty were charged *ad valorem*. The value of goods is taken to be 10 per cent. in advance of the fair market value in the principal markets of the country whence the goods were exported, the increase being roughly intended to represent the cost plus insurance, freight, and other charges to the place of landing.

2. **Value of Exports.**—The recorded value of goods exported is taken to represent the value in the principal markets of the Commonwealth in the ordinary commercial acceptation of the term.

3. **Records of Past Years.**—In the years preceding federation each State independently recorded its trade, and in so doing did not distinguish other Australian States from foreign countries. As the aggregation of the records of the several States is, necessarily, the only available means of ascertaining the trade of Australia for comparison with later years, it is unfortunate that past records of values and the direction of imports were not on uniform lines admitting of the preparation of a record for Australia as a whole. On the introduction of the Customs Act 1901, the methods of recording values were made uniform throughout the States, but it was not until September, 1903, that a fundamental defect in the system of recording transhipped goods was remedied. Up to this date goods arriving in any Australian port for transhipment to a port in another Australian State were recorded at the latter port only, where they were ordinarily recorded as from the transhipping State, and not as an import from the oversea country.

In recording exports an analogous defect also existed in most of the States, since goods despatched from one Australian State for transhipment in another State to an oversea country were simply recorded in the former as an export to the transhipping State; thus no proper record of the export oversea was made. Owing to this defect the oversea trade prior to September, 1903, is understated by an amount which it is impossible to accurately estimate, since it varies with the development of the shipping facilities of the States concerned. To discover the direction of the transhipped trade is not possible. The figures presented in the tables hereinafter are therefore the values as recorded, and must be taken as subject to the defects explained.

4. **Vessels (Ships) Imported and Exported.**—The imports or exports of vessels were not recorded prior to the year 1905. The value of vessels imported during the years 1905, 1906, 1907, 1908, and 1909 was, respectively, £265,957, £366,300, £680,700, £700,050, and £757,100, while the exports for the same years were respectively £79,975, £51,365, £90,201, £82,355, and £38,600.

5. **Ships' Stores.**—Prior to 1906 goods shipped in Australian ports on board oversea ships as ships' stores were included in the general exports. From 1906 ships' stores have been specially recorded as such, and omitted from the return of exports. The value of ships' stores during 1906 amounted to £875,966 (of which bunker coal represented £575,471, or 65.7 per cent.), during 1907 to £998,897 (bunker coal representing £663,724, or 66.45 per cent.), during 1908 to £1,196,106 (bunker coal £867,707, or 72.55 per cent.), and during 1909 to £1,071,677 (bunker coal £781,113, or 72.90 per cent.).

§ 4. Oversea Trade.

1. **Total Oversea Trade.**—The following table shews the total trade of the Commonwealth with oversea countries from the earliest date for which records are available. In consequence of the defects of record, referred to in the preceding section, the results can be only approximate to the actual figures. The very marked rise and sudden fall in the value of imports during the period 1837 to 1842 were contemporaneous with heavy land speculation and a subsequent severe financial crisis. The great increase of trade in the early fifties is due to the discovery of gold. In the State of Victoria the value of imports from oversea countries increased from £500,000 in 1851 to nearly £11,000,000 in 1853, and to £13,000,000 in 1854; while in New South Wales similar imports rose from £1,390,000 in 1851 to £5,500,000 in 1854, when the total imports into the Commonwealth reached the sum of £34 13s. 10d. per head, and the total trade £56 3s. 10d. per head of the population. The rapid influx of persons anxious to share the good fortunes of these times, however, soon reduced the value of the trade per head, till, in 1858, it had declined to £31 19s. 6d. per head. The period 1867-1872 shews a marked reduction in the value of trade per head. For some years prior to this period New South Wales had experienced a succession of indifferent seasons, and Victoria was suffering from a congested labour market consequent on the decline of alluvial gold-mining in that State. This congestion of the labour market during the years 1862 to 1866 gave rise to the agitation for a protective tariff to provide employment in manufactures, and in April, 1866, the Tariff Act, which expressed the protective policy since adhered to in Victoria, was assented to.

OVERSEA TRADE OF COMMONWEALTH, 1826 to 1909.

Year.	Recorded Value.			Value per Inhabitant.[1]			Percentage of Exports on Imports.
	Imports.	Exports.	Total.	Imports.	Exports.	Total.	
	£1,000.	£1,000.	£1,000.	£ s. d.	£ s. d.	s. d.	%
1826	435	131	566	8 3 10	2 9 4	10 13 2	30.1
1827	478	98	576	8 13 10	1 15 8	10 9 6	20.5
1828	735	122	857	12 17 0	2 2 8	14 19 8	16.6
1829	846	218	1,064	14 2 0	3 12 8	17 14 8	25.8
1830	697	194	891	10 11 6	2 18 11	13 10 5	27.8
1831	753	412	1,165	10 6 8	5 13 0	15 19 8	54.7
1832	956	495	1,451	11 19 4	6 3 11	18 3 3	51.8
1833	1,036	500	1,536	11 7 8	5 9 11	16 17 7	48.3
1834	1,373	756	2,129	13 9 10	7 8 6	20 18 4	55.1
1835	1,600	903	2,503	14 12 6	8 5 1	22 17 7	56.4
1836	1,659	985	2,644	13 18 4	8 5 3	22 3 7	59.4
1837	1,510	967	2,477	11 12 10	7 9 1	19 1 11	64.0
1838	2,055	1,054	3,109	14 7 3	7 7 4	21 14 7	51.3
1839	2,578	1,044	3,622	16 0 8	6 9 11	22 10 7	40.5
1840	3,615	1,513	5,128	20 1 6	8 8 1	28 9 7	41.9
1841	3,145	1,335	4,480	15 6 0	6 10 0	21 16 0	42.4
1842	1,742	1,264	3,006	7 10 11	5 9 7	13 0 6	72.6
1843	1,926	1,281	3,207	7 16 7	5 4 2	13 0 9	66.5
1844	1,201	1,291	2,492	4 13 4	5 0 4	9 13 8	107.5
1845	1,518	1,721	3,239	5 11 9	6 6 8	11 18 5	113.4
1846	1,995	1,794	3,789	6 19 5	6 5 5	13 4 10	89.9
1847	2,441	2,200	4,641	8 2 3	7 6 3	15 8 6	90.1
1848	2,000	2,278	4,278	6 4 10	7 2 2	13 7 0	113.9
1849	2,451	2,359	4,810	6 18 11	6 13 9	13 12 8	96.2
1850	3,009	2,688	5,697	7 14 8	6 18 1	14 12 9	89.3
1851	2,962	2,708	5,670	7 0 7	6 8 7	13 9 2	91.4

1. Reckoned on mean population of the year.

OVERSEA TRADE OF COMMONWEALTH, 1826 TO 1909.—Continued.

Year.	Recorded Value.			Value per Inhabitant.[1]						Percentage of Exports on Imports.
	Imports.	Exports.	Total.	Imports.			Exports.			Total.			
	£1,000.	£1,000.	£1,000.	£	s.	d.	£	s.	d.	£	s.	d.	%
1852	4,798	10,896	15,694	10	1	9	22	18	3	33	0	0	227.0
1853	14,990	14,403	29,393	26	17	11	25	16	10	52	14	9	96.1
1854	22,478	13,928	36,406	34	13	10	21	10	0	56	3	10	62.0
1855	14,428	15,134	29,562	19	7	11	20	6	11	39	14	10	105.0
1856	16,631	16,234	32,865	19	18	4	19	8	9	39	7	1	97.6
1857	18,872	16,127	34,999	20	9	0	17	9	5	37	18	5	85.5
1858	17,668	14,625	32,293	17	9	11	14	9	7	31	19	6	82.8
1859	20,376	17,027	37,403	18	19	6	15	17	1	34	16	7	83.6
1860	20,536	16,081	36,617	18	6	5	14	6	11	32	13	4	78.3
1861	17,651	17,413	35,064	15	5	2	15	1	1	30	6	3	98.7
1862	20,599	18,065	38,664	17	7	1	15	4	5	32	11	6	87.7
1863	21,248	19,336	40,584	17	4	7	15	13	7	32	18	2	91.0
1864	20,503	18,977	39,480	15	17	4	14	13	6	30	10	10	92.6
1865	20,660	19,706	40,366	15	4	4	14	10	4	29	14	8	95.4
1866	21,311	18,972	40,283	15	0	10	13	7	10	28	8	8	89.0
1867	15,964	18,384	34,348	10	18	1	12	11	2	23	9	3	115.2
1868	18,436	21,650	40,086	12	3	11	14	6	6	26	10	5	117.4
1869	19,910	20,066	39,976	12	14	4	12	16	4	25	10	8	103.8
1870	17,833	18,012	35,845	11	0	2	11	2	5	22	2	7	101.0
1871	17,017	21,725	38,742	10	3	3	12	19	6	23	2	9	127.7
1872	18,833	22,518	41,351	10	18	9	13	1	7	24	0	4	119.6
1873	24,567	26,370	50,937	13	17	10	14	18	2	28	16	0	107.4
1874	24,554	25,646	50,200	13	9	9	14	1	8	27	11	5	104.5
1875	24,939	24,978	49,917	13	6	2	13	6	7	26	12	9	100.1
1876	23,963	23,540	47,503	12	8	7	12	4	2	24	12	9	98.2
1877	25,797	23,107	48,904	12	18	8	11	11	8	24	10	4	89.6
1878	26,181	23,773	49,954	12	14	0	11	10	8	24	4	8	90.8
1879	24,233	21,184	45,417	11	7	10	9	19	2	21	7	0	87.4
1880	22,939	27,255	50,194	10	8	10	12	8	1	22	16	11	118.8
1881	29,067	27,528	56,595	12	16	2	12	2	8	24	18	10	94.7
1882	36,103	27,313	63,416	15	7	7	11	12	9	27	0	4	75.6
1883	35,454	30,058	65,512	14	9	9	12	5	8	26	15	5	84.8
1884	36,988	28,708	65,696	14	9	6	11	4	8	25	14	2	77.6
1885	36,862	26,667	63,529	13	18	2	10	1	3	23	19	5	72.3
1886	34,179	21,700	55,879	12	9	4	7	18	4	20	7	8	63.5
1887	29,572	23,421	52,993	10	8	8	8	5	3	18	13	11	79.2
1888	36,881	28,900	65,781	12	11	7	9	17	2	22	8	9	78.4
1889	37,577	29,553	67,130	12	8	8	9	15	7	22	4	3	78.6
1890	35,168	29,321	64,489	11	6	4	9	8	9	20	15	1	83.4
1891	37,711	36,043	73,754	11	16	0	11	5	6	23	1	6	95.6
1892	30,107	33,370	63,477	9	4	0	10	3	10	19	7	10	110.8
1893	23,765	33,225	56,990	7	2	7	9	19	4	17	1	11	139.8
1894	21,897	32,131	54,028	6	9	0	9	9	4	15	18	4	146.7
1895	23,195	33,644	56,839	6	14	1	9	14	6	16	8	7	145.0
1896	29,658	32,964	62,622	8	8	5	9	7	2	17	15	7	111.1
1897	31,958	37,783	69,741	8	18	3	10	10	9	19	9	0	118.2
1898	31,481	40,165	71,646	8	12	11	11	0	7	19	13	6	127.6
1899	34,330	48,599	82,929	9	6	0	13	3	5	22	9	5	141.6
1900	41,388	45,957	87,345	11	1	3	12	5	9	23	7	0	111.0
1901	42,434	49,696	92,130	11	3	9	13	2	1	24	5	10	117.1
1902	40,676	43,915	84,591	10	10	11	11	7	10	21	18	9	108.0
1903	37,811	48,250	86,061	9	13	10	12	7	4	22	1	2	127.6
1904	37,021	57,486	94,507	9	7	3	14	10	9	23	18	0	155.3
1905	38,347	56,841	95,188	9	10	11	14	3	0	23	13	11	148.2
1906	44,745	69,738	114,483	10	19	0	17	1	5	28	0	5	155.9
1907	51,809	72,824	124,633	12	9	4	17	10	6	29	19	10	140.6
1908	49,799	64,311	114,110	11	15	3	15	3	10	26	19	1	129.1
1909	51,172	65,319	116,491	11	16	10	15	2	3	26	19	1	127.6

1. Reckoned on mean population of the year.

The graphs illustrating the movement of the oversea trade of Australia (see pages 659 and 660) shew that periods of depressed trade have been recurrent at more or less regular intervals of from seven to nine years, and measured by population, each succeeding depression since 1855 has carried the trade per head lower than the preceding one, until the lowest point was reached in 1894.

The year 1892 marked the beginning of a period of acute financial stress, culminating in the commercial crisis of 1893. The collapse of these years, by no means confined to Australia, but affecting in varying degree many countries, is plainly reflected in the records of the trade of that period, for the trade for 1894 had fallen to £54,028,227, a decline of no less than 26.75 per cent. in three years. In 1895 there was slight recovery, and a continuous upward movement until 1901, when the trade reached £92,130,183, or £24 5s. 10d. per head. A decline, due to drought, in the exports of agricultural, pastoral, and dairy produce, reduced the trade of 1902 to £84,591,037, but although in the next year there was a further shrinkage in the exports of agricultural produce, the increase in the value of the exports of metals, specie, butter, and wool was so large as to effect an increase in the total trade. From 1902 the increase in the value of trade continued, till in 1907 it reached the amount of £124,633,280, equal to £29 19s. 10d. per inhabitant.

The imports during 1907 were, doubtless, to some extent inflated by the importation of goods in anticipation of the tariff revision of that year. The trade of 1908 shews a decline of £10,523,000 as compared with 1907, of which £8,513,000 was in the value of exports, notwithstanding an increase of £3,447,767 in the export of gold and specie. This decline in the value of exports was largely due to reduced prices ruling for wool and metals in consequence of the financial crisis in the United States during the previous year, and in lesser degree to the smaller exports of agricultural and pastoral produce, due to the unfavourable season experienced in some of the States.

The trade of 1909 shews a continued buoyancy. The value of imports during 1909 was greater by £1,372,623 than in 1908, while the total exports shewed an increased value of £1,007,778, although the shipments of gold-bullion and specie were lower by £5,193,587. The particular classes of goods from which these increases arise are shewn on pages 633 and 634.

2. **Ratio between Exports and Imports.**—The foregoing table shews the percentage of exports on imports for each year. From this it will be seen that, with few exceptions, due to temporary dislocations of trade, prior to 1892 the balance of trade has been on the side of imports, but from 1892 the reverse has been the case, the value of exports having increased by 92.72 per cent. and the imports by 65.40 per cent. The excess of imports in the earlier years represents the introduction of capital in the form of Government loans and for investment in private undertakings, and the excess of exports in the later years represents mainly the interest and profit on the earlier investments, repayment of loans to foreign bondholders, and also freight on trade which is carried mainly by ships of the United Kingdom and foreign countries.

§ 5. Direction of Trade.

1. **Country of Shipment and Country of Origin.**—From the 1st January, 1905, the Trade and Customs Department, in addition to the usual record of the countries whence goods directly arrived in Australia, has kept a record of the countries of their origin. The following table shews, for the years 1905 and 1909, the value of imports recorded as direct from the principal countries, and also the disposition of the value of imports against the countries where they were produced or manufactured. A similar comparison for the years 1906, 1907, and 1908 will be found in previous issues of this work.

COMMONWEALTH IMPORTS FROM COUNTRIES OF SHIPMENT AND COUNTRIES OF ORIGIN, 1905 and 1909.

Country.	Imports according to—							
	Country of Shipment.				Country of Origin.			
	1905.		1909.		1905.		1909.	
	Value.	Per cent.	Value.	Per cent.	Value.	Per cent.	Value.	Per cent.
	£		£		£		£	
United Kingdom	23,074,717	60.18	31,171,828	60.92	20,319,815	52.99	25,862,618	50.54
BRITISH POSSESSIONS—								
Canada	230,951	0.60	508,415	0.99	379,125	0.99	680,590	1.33
Ceylon	693,616	1.81	740,271	1.45	666,181	1.74	739,016	1.45
Hong Kong	277,038	0.72	241,533	0.47	3,350	0.01	11,251	0.02
India	1,311,427	3.42	1,794,483	3.51	1,352,105	3.53	1,830,756	3.58
New Zealand	2,333,516	6.08	2,195,313	4.29	2,277,152	5.93	2,072,849	4.05
Straits Settlements	222,276	0.58	489,909	0.95	104,104	0.27	160,360	0.31
Other British Possessions ...	315,326	0.82	915,170	1.79	422,976	1.10	1,144,973	2.24
Total British Possessions ...	5,384,150	14.03	6,885,094	13.45	5,204,993	13.57	6,639,795	12.98
Total British Countries ...	28,458,867	74.21	38,056,922	74.37	25,524,808	66.56	32,502,413	63.52
FOREIGN COUNTRIES—								
Austria-Hungary	11,333	0.03	12,885	0.02	81,553	0.21	270,194	0.53
Belgium	551,984	1.44	968,481	1.89	252,329	0.66	662,132	1.29
China	69,349	0.18	44,103	0.09	318,701	0.83	300,888	0.59
France	510,950	1.33	409,949	0.80	1,343,753	3.51	1,784,312	3.49
Germany	2,643,412	6.89	3,331,141	6.51	3,026,850	7.89	4,538,612	8.87
Japan	371,761	0.97	601,534	1.17	397,321	1.04	638,623	1.25
Netherlands	132,327	0.35	153,328	0.30	244,255	0.64	299,334	0.58
Norway	259,419	0.68	431,272	0.84	338,140	0.88	495,346	0.97
Spain	15,738	0.04	13,514	0.03	82,627	0.22	100,350	0.19
Sweden	42,978	0.11	328,790	0.64	186,554	0.49	418,165	0.82
Switzerland	22,826	0.06	33,793	0.07	389,294	1.01	795,432	1.55
United States	4,486,604	11.70	5,003,130	9.78	5,005,387	13.05	5,935,740	11.60
Other Foreign Countries ...	769,183	2.01	1,783,054	3.49	1,155,159	3.01	2,430,355	4.75
Total Foreign Countries ...	9,887,864	25.79	13,114,974	25.63	12,821,923	33.44	18,669,483	36.48
Total Imports from all Countries	38,346,731	100	51,171,896	100	38,346,731	100	51,171,896	100

The only country from which the value of direct imports exceeds by any large amount the value of the imports of goods which were manufactured or produced therein, that is to say, the only country which shews a balance of any magnitude as a distributor of the goods of other countries to Australia, is the United Kingdom. The records of our imports therefrom during the year 1909 shew that while the total direct imports from that country amounted to £31,171,828, the value of the manufactures or produce of the United Kingdom itself, imported from all countries whatsoever during the same year, was £25,862,618. From the foregoing figures it appears that goods to the value of *at least* £5,309,210 were received from other countries through the United Kingdom.

Other countries which shew balances as distributors to Australia, though absolutely of much less amount, are Belgium, Hong Kong, New Zealand, Straits Settlements, and Ceylon. The countries mentioned are, of course, not the only countries through which goods are indirectly imported into Australia, for the direct imports from other countries, notably France and Germany, include considerable values which are not of the produce of those countries. These values, however, are more than balanced by value of French and German goods received through the United Kingdom and other countries.

2. **Direct Imports according to Country of Shipment.**—The following table, shewing the average yearly value of imports from each of the principal countries during each succeeding quinquennial period from 1887 to 1906, and for the year 1909, shews

considerable change in direction of imports during the past twenty years. The countries mentioned in this table are those where the goods were shipped or whence they were directly consigned to Australia.

TRADE OF COMMONWEALTH WITH VARIOUS COUNTRIES, 1887 to 1909.

IMPORTS (INCLUDING BULLION AND SPECIE.)

Country.	Yearly Average of Quinquennial Periods.				Year 1909.
	1887-91.	1892-6.	1897-1901.	1902-6.	
	£	£	£	£	£
United Kingdom	24,818,787	18,241,366	22,794,700	23,163,660	31,171,828
British Possessions—					
Canada	95,592	89,861	230,459	291,253	508,415
Cape Colony	3,090	11,364	3,858	7,105	100,842
Ceylon	124,057	239,774	410,057	603,660	740,271
Fiji	170,100	92,125	104,459	79,820	359,247
Hong Kong	769,699	460,883	313,578	303,322	241,533
India	745,070	606,181	914,859	1,148,895	1,794,483
Mauritius	483,283	178,074	175,966	104,911	54,621
Natal	10,893	4,655	114	2,429	19,550
New Zealand	1,826,537	1,100,533	1,541,128	2,479,298	2,195,313
Papua	12,166	16,623	52,416	67,987	76,564
Straits Settlements ...	126,691	138,055	281,022	178,658	489,909
Other British Possessions	22,605	15,718	34,247	136,443	304,346
Total British Possessions ...	4,389,783	2,953,846	4,062,163	5,403,781	6,885,094
Total British Countries ...	29,208,570	21,195,212	26,856,863	28,567,441	38,056,922
Foreign Countries—					
Argentine Republic ...	336	101	3,264	229,872	30
Belgium	227,995	274,559	394,094	559,880	968,481
Chile and Peru ...	19,419	2,511	32,128	16,112	6,673
China	800,454	327,120	262,195	135,219	44,103
France	360,000	201,284	476,756	465,330	409,949
Germany	1,286,054	1,107,496	2,254,746	2,703,806	3,331,141
Hawaiian Islands, New Britain, New Caledonia, New Hebrides, and South Sea Islands ...	109,862	78,286	150,510	140,294	188,989
Italy	31,650	67,672	137,852	168,221	240,632
Japan...	39,787	63,195	225,086	380,388	601,534
Java	424,173	464,351	461,748	510,689	1,056,885
Netherlands	19,940	12,125	36,919	101,531	153,328
Norway	354,924	154,277	284,024	303,446	431,272
Philippine Islands ...	13,350	15,869	69,385	70,669	90,817
Sweden	167,178	21,872	97,189	69,828	328,790
United States of America	2,268,620	1,682,092	4,355,724	5,014,408	5,003,130
Other Foreign Countries	49,669	56,545	219,717	282,847	259,220
Total Foreign Countries ...	6,173,411	4,529,355	9,461,337	11,152,540	13,114,974
Total	35,381,981	25,724,567	36,318,200	39,719,981	51,171,896

Expressing each item as percentage on the total of the imports, the following results are obtained :—

COMMONWEALTH IMPORTS.—PERCENTAGES OF THE IMPORTS FROM EACH COUNTRY ON THE TOTAL IMPORTS, 1887 to 1909.

Country.	1887-91.	1892-6.	1897-1901.	1902-6.	1909.
	per cent.	per cent.	per cent.	per cent.	per cent.
United Kingdom	70.14	70.92	62.77	58.30	60.92
BRITISH POSSESSIONS—					
Canada	0.27	0.35	0.64	0.73	0.99
Cape Colony	0.01	0.04	0.01	0.02	0.20
Ceylon	0.35	0.93	1.13	1.52	1.45
Fiji	0.48	0.36	0.29	0.20	0.70
Hong Kong	2.18	1.79	0.86	0.76	0.47
India	2.11	2.36	2.52	2.89	3.51
Mauritius	1.37	0.69	0.49	0.27	0.11
Natal	0.03	0.02	0.00	0.01	0.04
New Zealand	5.16	4.28	4.24	6.24	4.29
Papua	0.03	0.06	0.14	0.17	0.15
Straits Settlements	0.36	0.54	0.77	0.45	0.95
Other British Possessions	0.06	0.06	0.09	0.34	0.59
Total British Possessions ...	12.41	11.48	11.18	13.60	13.45
Total British Countries	82.55	82.40	73.95	71.90	74.37
FOREIGN COUNTRIES—					
Argentine Republic	0.00	0.00	0.01	0.58	0.00
Belgium	0.64	1.07	1.09	1.41	1.89
Chile and Peru	0.06	0.01	0.09	0.04	0.01
China	2.26	1.27	0.72	0.34	0.09
France	1.02	0.78	1.31	1.17	0.80
Germany	3.63	4.31	6.21	6.81	6.51
Hawaiian Islands, New Britain, New Caledonia, New Hebrides and South Sea Islands	0.31	0.30	0.41	0.36	0.37
Italy	0.09	0.26	0.38	0.42	0.47
Japan	0.11	0.25	0.62	0.96	1.17
Java	1.20	1.80	1.27	1.29	2.07
Netherlands	0.06	0.05	0.10	0.26	0.30
Norway	1.01	0.60	0.78	0.76	0.84
Philippine Islands	0.04	0.06	0.19	0.18	0.18
Sweden	0.47	0.08	0.27	0.18	0.64
United States of America	6.41	6.54	12.00	12.62	9.78
Other Foreign Countries	0.14	0.22	0.60	0.72	0.51
Total Foreign Countries	17.45	17.60	26.05	28.10	25.63
Total	100	100	100	100	100

3. **Imports from the United Kingdom.**—The foregoing tables shew that while the value of direct imports from the United Kingdom during 1909 is above the yearly average of the period under review, the proportion to total imports has diminished, having fallen from 70.14 per cent. during the years 1887-91 to 60.92 per cent. in 1909.

It will be observed, however, that the percentage proportion for 1909 is an advance on that of the quinquennium 1902-6, and is also higher than in the year 1908, when the proportion was 60.10 per cent. The position of the United Kingdom as indicated by her percentage proportion of the total trade is largely affected by the imports of vegetable foodstuffs, a branch of trade in which the United Kingdom cannot participate. The apparent diversion of Australian trade from Great Britain is more fully dealt with hereinafter, viz., in sub-section 11 of this chapter. The values of the principal imports of United Kingdom origin during the year 1909 are as follows:—

Ale and beer, £322,803; apparel and textiles—apparel, £2,112,830, textiles, £6,905,681; arms, ammunition and explosives, £567,214; books and periodicals, £465,719; brushware, £56,981; earthenware, etc., £195,516; clocks and watches, £38,486; cocoa and chocolate, £144,200; confectionery, £133,583; cordage, metal, £80,692; cordage, other, £127,033; cutlery, £145,231; drugs and chemicals—alkalies (soda), £79,259, fertilisers, £74,014, medicines, £123,428, other drugs and chemicals, £459,153; electrical and gas appliances, £149,434; electrical materials, £164,446; fancy goods, £165,431; fish, fresh and preserved, £143,694; furniture, £66,162; glass and glassware, £107,964; indiarubber manufactures, £174,844; instruments, musical, £54,507; instruments, scientific, etc., £143,144; iron and steel—pig, £129,212, bar, hoop, ingot, etc., £426,743, scrap, £37,125, girders, beams, etc., £77,648, plate and sheet, galvanised and corrugated, £1,375,433, not galvanised or corrugated, £148,537, pipes and tubes, £422,616, rails, fishplates, etc., £436,872, tinned plates, plain, £284,446; wire, £139,037; wire netting, £216,186; jewellery and precious stones, £239,586; leather and leather manufactures, £209,086; machines and machinery, £1,758,340; metals, manufactures of, £1,241,622; milk, preserved, £135,240; oils (not essential), £181,869; paints and colours, £279,322; paper, £587,426; pickles, sauces, etc., £101,148; plated ware, £174,836; soap, £34,994; specie, £52,697; spirits, £632,122; stationery, £662,740; tobacco, £37,852; tools of trade, £216,568; varnishes, £63,487; vehicles—bicycles, etc., £149,003, motors, £303,975, other vehicles, £60,061; vessels (ships), £749,950; yarns, £125,968.

4. **Imports Shipped from British Possessions.**—The growth of the value of imports from other British possessions during the past twenty years has been such as to increase the proportion to total imports from 12.41 per cent. in the years 1887-91 to 13.45 per cent. in 1909, the actual values being respectively £4,389,783 and £6,885,094. Of the total imports from British possessions during 1909, 32.84 per cent., or 4.29 per cent. of all imports, was from New Zealand, 26.85 per cent., or 3.51 per cent. of all imports, from India, and 11.07 per cent., or 1.45 per cent. of all imports, from Ceylon.

5. **Principal Imports, the Produce of British Possessions, 1909.**—These are as follows:—

(i.) *Africa, South.* Bark, tanning, £12,369; maize, £66,438; precious stones, £74,343.

(ii.) *Canada.* Apparel and textiles, £14,315; boots and shoes, £6472; drugs and chemicals, £4141; fish, £49,969; furniture, £11,197; agricultural implements and machinery, £150,541; other machines and machinery, £10,666; rails and fishplates, £132,963; other metal manufactures, £12,934; paper, £136,803; timber, £84,849; bicycles and other vehicles, £27,244.

(iii.) *Ceylon.* Coffee and chicory, £1700; nuts, £13,803; tea, £701,757. The large increase in the imports from Ceylon—from £124,057 during the years 1887-91, to £739,016 in 1909—is due to the displacement of China teas in the Australian markets by those of India and Ceylon. Of the total imports of tea during the year 1909, 64.52 per cent. was the produce of Ceylon.

(iv.) *Fiji.* Bananas, £96,307; copra, £4796; sugar and molasses, £227,682.

(v.) *India.* Bags and sacks, £1,189,937; canvas and hessians, £157,713; carpets, mats, etc., £15,155; coffee and chicory, £26,820; cotton, raw, £8422; other unmanu-

factured fibres, £10,718; iron, pig, £7644; rice, £1475; shellac, £9537; manures, £16,847; oils, £39,682; skins and hides, £28,302; spices, £11,790; tea, £224,644; timber, £2708; wax, paraffin, £10,572; yarns, £10,453.

(vi.) *Mauritius.* Sugar, £54,256.

(vii.) *New Zealand.* Apparel and textiles, £10,319; animals—horses, £67,721, sheep, £11,482; military stores, £26,898; coal, £10,828; fibres, £109,154; fish, £29,829; gold, bullion and ore, £937,828; grain—barley, £12,277; oats, £32,366, hops, £8178; implements and machinery (agricultural), £5601; machines and machinery, £5240; meats, £19,467; seeds, £30,285; ships, £4150; skins and hides, £167,833; timber, £460,969; wool, £21,810; cordage and twines, £17,336.

(viii.) *Straits Settlements.* Rice, £1731; oils, fats, and waxes—paraffin wax, £11,299, benzine, £12,651, other oils, etc., £3930; spices, £29,021; sago and tapioca, £42,991; wood and wicker, £8046.

6. **Imports Shipped from Foreign Countries.**—The imports direct from foreign countries during the year 1909 represented 25.63 per cent. of the total imports, as compared with 17.45 per cent. during the years 1887-91. Compared, however, with the average of the quinquennium 1902-6, the proportion during the year 1909 shews a decline mainly due to the smaller proportion of the import trade drawn from the United States of America. Of the total imports into Australia shipped from foreign countries 25.40 per cent.—6.51 per cent. of all imports—was from Germany, and 38.15 per cent.—9.78 per cent. of all imports—was from the United States.

7. **Principal Imports the Produce of Foreign Countries.**—The details are as follows:—

(i.) *Austria-Hungary.* Apparel and textiles, £115,680; furniture, £19,386; chinaware, £13,359; glassware, £12,449; fancy goods, £16,659; jewellery and precious stones, £7379; pipes, smoking, etc., £7095.

(ii.) *Belgium.* Apparel, £58,366; textiles, £95,583; candles, £2666; drugs, chemicals, and fertilisers, £9847; glass and glassware, £114,199; iron and steel—partly manufactured, £66,874, girders, beams, etc., £758, plate and sheet, £21,613, railway iron, £21,693; wire, £11,447; wire netting, £1118; jewellery, £37,388; machines and machinery, £13,471; matches and vestas, £28,239; metal manufactures, £45,273; motors and parts, £17,622; paper, £22,722; zinc manufactures, £22,337.

(iii.) *Chile.* Soda nitrate, £6711.

(iv.) *China.* Apparel and textiles, £57,447; fish, £11,080; fruit, £9720; ginger, £8965; rice, £58,507; nuts, £7900; oils, £10,513; tea, £75,063.

The decline of the value of imports from China during the past twenty years is due to the loss of the tea trade, which now draws its supplies mainly from India and Ceylon.

(v.) *France.* Apparel and textiles, £857,705; cream of tartar, £131,269, other drugs and chemicals, £42,484; fruits, £7948; fancy goods, £32,088; jewellery, £22,473; timepieces, £4679; pipes, smoking, etc., £48,675; motor vehicles and parts, £101,642; rubber manufactures, £35,226; leather, £18,853; spirits, £155,940; tiles, £12,208; wine, £94,073; machinery and manufactures of metal, £47,947.

(vi.) *Germany.* Ale and beer, £60,281; apparel and textiles, £1,295,976; arms, ammunition, and explosives, £89,432; brushware, £28,146; cement, £27,726; chinaware, etc., £41,690; earthenware, £18,427; drugs and chemicals—calcium carbide, £6258, fertilisers, £22,180, other drugs, etc., £140,152; fancy goods, £121,015; furniture, £9490; minor articles for furniture, £7185; glass and glassware, £77,112; hops, £9846; indiarubber manufactures, £140,320; metals and manufactures of metals—iron and steel—

bar, hoop, ingot, etc., £94,335, plate and sheet, £61,004, pipes and tubes, £40,413, railway iron, £70,201, tools of trade, £21,353; wire, £348,503; wire netting, £150,004; machines and machinery, £168,446; lamps and lampware, £39,488; electrical and gas appliances, £50,044; other manufactures of metals, £241,542; jewellery, cameos, etc., £81,025; leather and leather manufactures (excluding boots and shoes), £69,987; musical instruments, £256,306; paper, £156,143; spirits, £17,180; stationery, £80,827; tobacco, £8107; paints and varnishes, £12,221.

(vii). *Italy.* Apparel and textiles, £142,203; fruits, £31,840; matches and vestas, £15,021; marble and stone, £27,592; oils, £6877; nuts, £10,939; sulphur, £19,424; motors and parts, £29,853.

(viii.) *Japan.* Apparel and textiles, £361,187; bags, baskets, etc., £15,681; chinaware and earthenware, £9213; fancy goods, £8366; fertilisers (superphosphates), £30,454; furniture, £5685; rice, £12,976; oils and waxes, £27,568; sulphur, £71,504; timber, £28,735.

(ix.) *Java.* Cotton, raw, £6021; hats and caps, £6,191; maize, £21,930; rice, £38,712; kapok, £76,516; sugar, £845,734; timber, £1971; tobacco, £3056; tea, £45,251.

(x.) *Netherlands.* Apparel and textiles, £47,687; cocoa and chocolate, £62,433; cameos and precious stones, £9471; paper, £19,755; spirits, £98,160.

(xi.) *Norway.* Calcium carbide, £67,815; fish, £44,686; milk, preserved, £3486; paper, £72,845; timber, £289,684.

(xii.) *Philippine Islands.* Flax and hemp, £53,134; cigars, £34,984.

(xiii.) *Russia.* Flax, £6026; oils, £11,436; timber, £38,796.

(xiv.) *Sweden.* Calcium carbide, £44,016; cream separators, £50,471; matches and vestas, £47,302; paper, £70,772; telephones, £20,307; timber, £133,396.

(xv.) *Switzerland.* Apparel and textiles, £656,897; cigars, £10,984; cocoa and chocolate, manufactured, £24,781; milk, £4437; watches, £65,317.

(xvi.) *United States of America.* Apparel and textiles:—Boots and shoes, £54,278; other apparel, £110,923; textiles, £180,224; ammunition and explosives, £57,425; cameras, magic lanterns, phonographs, etc., £150,277; clocks and watches, £60,193; fish, £130,466; furniture, £45,722; glass and glassware, £28,843; glucose, £35,626; indiarubber manufactures, £27,954; leather, £252,389; meats, £50,139; medicines, £72,372; metal manufactures:—iron and steel: bars, ingots, hoop, etc., £47,982, girders, beams, etc., £12,825, pipes and tubes, £57,825, plate and sheet, £83,787, railway iron, £140,300, tools of trade, £159,531; wire, £207,199; machines and machinery, agricultural, £158,166; other machines and machinery, £661,865; other metal manufactures, £251,360; musical instruments, £27,379; oils, fats and waxes—kerosene, £577,602, lubricating oils and greases, £116,551, naphtha, £33,790, paraffin wax, £25,210, turpentine, £37,516; paper, £164,563; resin, £28,919; soap, £33,376; stationery, £66,652; timber, £594,141; tobacco, cigars, etc., £433,718; wood manufactures, £80,114; vehicles, bicycles and motors, and parts, £100,327.

8. **Direction of Exports.**—The following table shews the average yearly value of exports to principal countries during each quinquennial period from 1887 to 1906 and for the year 1909. As in the case of the import trade, considerable alteration in the direction of exports is evident. The largest increases in exports to British possessions are shewn to the various South African colonies and to India and Ceylon. During the South African war large shipments of gold were sent from the Commonwealth to that country, and the decline in the value of the export to Cape Colony and Natal during 1909 is due to the cessation of these shipments together with a decline in the exports of timber. The value of exports to India and Ceylon is also mainly of gold, of which exceptionally heavy shipments were made during 1904 and 1905. The large increases in the case of Belgium,

Germany, and France are probably more apparent than real, being mainly due to the increase in local sales of wool, skins, etc., and the resulting direct export to the countries mentioned, while formerly a much larger proportion of wool, etc., was sent to the United Kingdom for sale, and ultimately found its way from there to the Continent. The figures given below, however, do not, even now, denote the total purchases by European countries of Australian produce, as large quantities are still distributed from London.

TRADE OF COMMONWEALTH WITH VARIOUS COUNTRIES, 1887 to 1909.

EXPORTS (INCLUDING BULLION AND SPECIE).

Country.	Yearly Average of Quinquennial Periods.				Year 1909.
	1887-91.	1892-6.	1897-1901.	1902-6.	
	£	£	£	£	£
United Kingdom ...	22,003,741	23,030,779	25,337,456	25,461,689	30,917,133
British Possessions—					
Canada ...	503	12,793	77,627	172,757	80,242
Cape Colony ...	84,786	80,515	1,840,961	2,116,733	998,189
Ceylon ...	87,404	434,081	1,188,136	4,249,831	1,216,754
Fiji ...	105,267	121,771	173,080	246,671	336,288
Hong Kong ...	415,885	489,987	375,559	579,829	569,933
India ...	735,701	404,986	1,220,179	3,336,387	2,019,652
Mauritius ...	105,764	54,890	36,992	52,075	40,804
Natal ...	81,498	100,756	672,114	1,062,293	1,022,339
New Zealand ...	748,444	987,718	1,131,067	1,725,234	2,341,625
Papua ...	12,677	17,682	46,150	46,744	75,768
Straits Settlements ...	107,523	105,040	103,742	209,612	444,611
Other British Possessions ...	6,770	10,128	30,438	77,961	77,921
Total British Possessions	2,492,222	2,820,347	6,896,045	13,876,127	9,224,126
Total British Countries ...	24,495,963	25,851,126	32,233,501	39,337,816	40,141,259
Foreign Countries—					
Argentine Republic ...	...	195	20,938	30,485	95,984
Belgium ...	1,341,908	1,422,378	1,488,785	2,695,512	4,753,514
Chile and Peru ...	116,931	155,666	239,390	473,649	424,155
China ...	43,884	23,778	208,601	242,580	151,668
France ...	663,672	2,064,639	2,641,244	4,190,591	6,480,782
Germany ...	559,697	1,580,692	2,128,596	3,406,633	6,394,634
Hawaiian Is., New Britain, New Caledonia, New Hebrides and South Sea Is.	275,892	227,754	349,922	350,796	476,954
Italy ...	16,136	44,954	177,742	156,913	245,858
Japan ...	8,950	48,232	138,686	580,670	1,882,692
Java ...	57,921	70,582	125,285	157,559	310,703
Netherlands ...	18,013	45,008	69,634	226,958	220,724
Norway ...	6	971	105	14	841
Philippine Islands ...	117,471	24,664	150,999	331,047	531,438
Spain ...	10,692	7,047	12,835	61,300	68,520
Sweden ...	4	1,433	1,485	3,915	534
United States of America ...	1,642,587	1,263,128	3,941,509	2,591,428	2,599,063
Other Foreign Countries ...	77,826	234,656	510,600	408,116	539,513
Total Foreign Countries	4,951,590	7,215,777	12,206,356	15,908,166	25,177,577
Total ...	29,447,553	33,066,903	44,439,857	55,245,982	65,318,836

If each item be expressed as a percentage on the total export, the results will be as follows:—

COMMONWEALTH EXPORTS.—PERCENTAGES OF THE EXPORT TO EACH COUNTRY ON THE TOTAL EXPORTS, 1887 to 1909.

Country.	1887-91.	1892-6.	1897-1901.	1902-6.	1909.
	per cent.	per cent.	per cent.	per cent.	per cent.
United Kingdom	74.74	69.65	57.01	46.09	47.33
British Possessions—					
Canada	0.00	0.04	0.18	0.32	0.12
Cape Colony	0.29	0.24	4.14	3.83	1.53
Ceylon	0.30	1.31	2.67	7.69	1.86
Fiji	0.36	0.37	0.39	0.45	0.52
Hong Kong	1.41	1.48	0.85	1.05	0.87
India	2.50	1.23	2.75	6.04	3.09
Mauritius	0.36	0.17	0.08	0.09	0.06
Natal	0.28	0.30	1.51	1.92	1.56
New Zealand	2.54	2.99	2.55	3.12	3.59
Papua	0.04	0.05	0.10	0.08	0.12
Straits Settlements ...	0.36	0.32	0.23	0.38	0.68
Other British Possessions ...	0.02	0.03	0.07	0.14	0.12
Total British Possessions	8.46	8.53	15.52	25.11	14.12
Total British Countries ...	83.20	78.18	72.53	71.20	61.45
Foreign Countries—					
Argentine Republic ...	...	...	0.05	0.06	0.15
Belgium	4.58	4.30	3.35	4.88	7.28
Chile and Peru	0.39	0.47	0.54	0.86	0.65
China	0.15	0.07	0.47	0.44	0.23
France	2.25	6.24	5.94	7.59	9.92
Germany	1.90	4.78	4.79	6.17	9.79
Hawaiian Is., New Britain, New Caledonia, New Hebrides and South Sea Is.	0.93	0.69	0.79	0.63	0.73
Italy	0.05	0.14	0.40	0.28	0.38
Japan	0.03	0.15	0.31	1.05	2.88
Java	0.19	0.21	0.28	0.28	0.48
Netherlands	0.06	0.14	0.16	0.41	0.34
Norway	...	...	...	...	...
Philippine Islands ...	0.40	0.07	0.34	0.60	0.81
Spain	0.03	0.02	0.03	0.11	0.10
Sweden	...	0.01	...	0.01	...
United States of America ...	5.58	3.82	8.87	4.69	3.98
Other Foreign Countries ...	0.26	0.71	1.15	0.74	0.83
Total Foreign Countries...	16.80	21.82	27.47	28.80	38.55
Total	100	100	100	100	100

9. **Exports to the United Kingdom.**—Notwithstanding an increase of 40.5 per cent. in the actual value of exports to the United Kingdom during the year 1909 as com-

pared with the yearly average of the period 1887-91, the proportion of the total exports despatched to the United Kingdom has fallen from 74.74 per cent. in the earlier period to 47.33 per cent. in the year 1909. This decrease is, to some extent, undoubtedly due to the fact that wool and other commodities which were formerly despatched to the United Kingdom, and distributed from that centre, are now to a greater extent shipped direct to continental ports.

The principal exports to the United Kingdom during the year 1909 were as follows:—Butter, £2,085,306; fruit—apples, £129,745, other, including pulp, £22,095; grain—wheat, £5,441,982; flour, £284,410, other, £61,772; hair, £27,803; jewellery and precious stones, £137,591; leather, £334,902; meats, frozen—beef, £533,044, mutton and lamb, £1,161,475, rabbits and hares, £419,544, other frozen meat, £15,100, potted meat, £79,869, meat, preserved in tins, £333,807; minerals and metals—copper, ingots, £214,867, in matte, £855,406, ore, £69,288; gold—bullion, £1,914,079, in matte, £487,613, ore, £51,614; silver—bullion, £43,342, in matte, £338,300, silver and silver-lead ore, £19,995; lead—pig, £159,761, in matte, £337,522; ores, n.e.i., £46,933; spelter and concentrates, £63,355; tin, ingots and ore, £668,976; oil, cocoanut, £98,915; pearlshell, £171,084; skins—hides, £177,738, rabbit and hare, £251,657, sheep, £787,669, other skins, £340,492; specie, gold, £445,242; tallow, £1,103,332; timber, £161,799; wine, £91,604; wool—greasy, £8,340,210, scoured, £2,222,719.

10. **Exports to British Possessions.**—The value of exports to British Possessions during 1909 is the lowest recorded since 1901, having declined from a yearly average of £13,876,127 during the years 1902-6 and £13,122,673 in 1907, to £9,224,126. This decline is due to reduced exports of gold, which fell from an average of £8,396,113 during the years 1902-6, and £6,449,790 in 1907, to £4,036,214 in 1909. From 1899 the shipments of gold to India, Ceylon, and South Africa have been very large, being particularly heavy during the quinquennium 1902-6. If, therefore, this element of the export trade be eliminated, it will be seen that the sales of merchandise to British Possessions have been materially increased.

11. **Principal Exports to British Possessions, 1909.**—These are as follows:—

(i.) *Canada.* Butter, £17,946; meats, £17,447; oil, cocoanut, £2770; skins, £16,100; timber, £5615; tin, £4352; wool, £7748.

(ii.) *Cape Colony.* Butter, £94,884; grain—wheat, £680,002, flour, £80,131; leather, £56,848; meats—frozen beef, £3871, mutton and lamb, £1240, other meats, £4424; sheep (living), £6110; sugar, £39,529; timber, £2388.

(iii.) *Ceylon.* Butter, £6639; horses, £2201; gold, bullion, £90,572; specie, £853,300; grain—flour, £20,602; lead, pig, £21,550; silver, bullion, £166,760; soap, £11,467; sugar, £1159.

(iv.) *Fiji.* Apparel and textiles—apparel, including boots and shoes, £20,577; textiles, £15,109; bags, sacks, and cordage, £7836; biscuits, £18,621; coal, £15,688; drugs and chemicals, £9486; grain, prepared—bran, pollard, and sharps, £23,131; flour, £19,662; machines and machinery, £10,263; metal manufactures, £37,709; oils, £7204; specie, £41,050; timber, £8345.

(v.) *Hong Kong.* Butter, £19,696; coal, £17,908; fish, £16,524; flour, £15,462; lead, pig, £22,062; sandalwood, £25,546; specie, gold, £385,056; timber undressed, £30,298.

(vi.) *India.* Coal, £34,151; copper, ingots, £6800; gold, bullion, £1,016,262; specie, £301,093; horses, £125,631; grain, wheat, £18,771; hay and chaff, £4125; lead, pig, £5850; meats, £14,973; silver, bullion, £74,320; tallow, £2802; timber, £364,485; wool, £16,657.

(vii.) *Natal.* Animals, living — horses, £100, sheep, £8870; butter, £16,988; fruit, £2499; grain—wheat, £29,706; flour, £148,906; jams and jellies, £5176; leather, £9645; meats, frozen—beef, £14,380, mutton, £22,338, rabbits and hares, £2274, meats, other, £4478; specie, gold, £650,000; sugar, £42,000; tallow, £11,904; timber, £22,315.

(viii.) *New Zealand.* Apparel, textiles, etc.:—apparel—boots and shoes, £11,394; other apparel, £33,007; textiles, £68,804; bags and sacks, £2663; bark, tanning, £31,414; books and periodicals, £49,537; cameras, magic lanterns, etc., £29,045; coal, £119,973; copper, ingots, £2572; drugs and chemicals — fertilisers, £78,119; medicines, £33,880; other drugs, etc., £35,773; electrical materials, £13,754; fruit, fresh, £55,891, dried, £2003; glass and glassware, £7154; grain—wheat £13,654; flour, £51,117; rice, £29,549; indiarubber manufactures, £46,607; iron, pig, £2855; jewellery and precious stones, £15,848; lead, pig, £8633; leather and leather manufactures, £44,232; metals, manufactures of—agricultural implements and machinery, £18,568; other machines and machinery, £59,653; other manufactures of metals, £66,771; oils, etc., £17,836; onions, £6264; plants, trees, and bulbs, £10,056; potatoes, £1884; salt, £16,230; seeds, £7063; soap, £24,214; specie—gold, £702,800; spirits, £16,941; stationery, £54,598; sugar, £18,341; tea, £64,790; timber, £188,955; tin, ingots, £20,812; tobacco, £80,479; wine, £25,513.

(ix.) *Papua.* Apparel and textiles, etc., £8159; flour, £2511; meats, £8788; tobacco, £14,017.

(x.) *Straits Settlements.* Butter, £20,536; coal, £78,201; grain, flour, £64,653; horses, £10,339; machines and machinery, £5004; meats, £22,980; tin ore, £186,191; tin concentrates, £22,425; timber, undressed, £6370.

12. **Exports to Foreign Countries.**—The foregoing table shews a very great increase in the value of exports to foreign countries, both in actual amounts and in relation to total exports. The value of exports to foreign countries during 1909 shews an increase of 408 per cent. over similar figures for the years 1887-91, thus increasing the proportion per cent. of all exports from 16.80 per cent. in the earlier years to 38.55 per cent. in 1909. This increase is chiefly due to the growing demand among foreign nations for Australian wool, large consignments of which are now made direct to Belgium, France, Germany, and the United States.

13. **Principal Exports to Foreign Countries.**—These are as follows:—

(i.) *Argentine Republic.* Agricultural implements and machinery, £88,043; timber, £7499.

(ii.) *Belgium.* Bark, tanning, £5966; copper, £406,061; grain, wheat, £27,128; lead, £52,066; leather, £22,700; silver ore, £69,582, concentrates, £369,161; hides and skins, £384,591; zinc concentrates, £1,065,682; timber, £12,154; tin, £48,584; wool, £2,230,206.

(iii.) *Chile.* Coal, £258,478.

(iv.) *China.* Butter, £17,397; coal, £7470; copper, £23,100; flour, £2671; lead, £13,716; sandalwood, £12,180; specie, gold, £30,402; timber, undressed, £26,606.

(v.) *Egypt.* Butter, £7732; flour, £14,405; meats—beef, £26,747, mutton, £4987, other meats, £934; timber, undressed, £62,096.

(vi.) *France.* Concentrates—silver, £37,022, zinc, £85,820, copper, £31,140; hides and skins, £635,983; lead, £13,958; ores, £33,334; tallow, £17,000; tin, £2780; wool, £5,594,983.

(vii.) *Germany.* Bark, tanning, £43,063; concentrates—silver, £39,444; zinc, £99,630. Copper, £117,370; fruit, fresh, £26,835; grain—bran, pollard, and sharps, £3487, wheat, £9003; hides and skins, £168,341; lead, £87,215; linseed cake and oilcake, £4100; oil, cocoanut, £8036; ores—scheelite, £6861, silver and silver lead, £85,515, wolfram, £45,570, other ores, £12,347; sausage casings, £68,857; specie, gold, £450,000; timber, £18,081; wool, £5,006,623.

(viii.) *Italy.* Grain—wheat, £93,648; lead, £16,585; skins, £19,012; tallow, £11,347; wool, £97,756.

(ix.) *Japan.* Butter, £4375; grain, wheat, £12,694; lead, £47,905; manures, £22,393; oils, £9155; specie, gold, £1,450,000; tallow, £17,738; wool, £264,630.

(x.) *Java.* Butter, £54,267; coal, £34,132; fertilisers, £14,549; flour, £132,908; horses, £19,598; meats, £6838; specie, gold, £20,000.

(xi.) *Netherlands.* Concentrates—silver, £89,855, zinc, £48,599; hides and skins, £2241; lead, £26,850; silver ore, £38,616; tallow, £9345.

(xii.) *Peru.* Coal, £22,863; wheat, £141,311.

(xiii.) *Philippine Islands.* Butter, £42,402; coal, £121,668; flour, £117,825; fodder, £17,211; horses, £5303; meats—bacon and hams, £6239, beef, £125,052, mutton, £6059, pork, £5755, other meats, £2489; timber, £3372; wheat, £33,404.

(xiv.) *United States of America.* Coal, £57,430; cocoanut oil, £3708; copper, £238,306; gold, in matte, £35,969; hides and skins, £363,776; pearlshell, £78,361; silver in matte, £28,659; tin, £8028; vessels, £19,000; wool, £1,691,389.

§ 6. Development of Export Trade to Eastern Countries.

1. **Trade with Eastern Countries.**—During recent years attention has been given by Australian exporters to the possibilities of the markets of eastern countries. Commissioners have been sent by the States to eastern trade centres to investigate and advise as to the requirements of these markets in regard to such commodities as Australia is prepared to supply, but a survey of the export returns of the past six years discloses a very small expansion in the value of the export of merchandise in the direction indicated.

The principal countries concerned in this trade are China, India, Ceylon and Burmah, Japan, Java, Philippine Islands, Straits Settlements, and Hong Kong, and the particulars given in the following tables apply to these countries only:—

VALUE OF PRINCIPAL ITEMS OF MERCHANDISE EXPORTED FROM THE COMMONWEALTH TO EASTERN COUNTRIES, 1904 to 1909.

Article.	1904.	1905.	1906.	1907.	1908.	1909.
	£	£	£	£	£	£
Butter	84,569	93,707	109,792	136,299	151,984	166,046
Coal	167,588	260,343	336,550	319,292	501,002	293,584
Copper	390,324	426,937	177,251	250,461	239,646	43,255
Grain and pulse—						
Wheat	54,315	99,628	109,212	173,528	111,885	68,558
Flour	97,868	298,606	538,177	692,879	295,646	359,877
Other (prepd. & unprepd.)	74,645	58,858	8,874	17,614	10,536	17,690
Hay, chaff, and comp. fodder	87,864	44,353	21,075	34,549	29,554	30,684
Horses	181,146	329,515	232,102	302,809	199,239	165,370
Lead	138,397	131,223	177,166	179,346	203,799	115,310
Meats	132,499	213,567	184,975	188,197	248,799	206,759
Sandalwood	25,417	38,793	70,579	66,309	77,468	45,120
Skins, hoofs, sinews, tallow	26,467	55,675	72,284	71,758	43,167	46,428
Tin ore	79,345	38,466	91,743	187,702	205,114	186,191
Timber, undressed	238,318	387,408	490,600	362,999	367,322	447,347
Wool	356,390	156,372	292,079	501,886	147,416	281,537
Other merchandise... ...	163,811	337,182	208,719	304,769	338,097	270,433
Total merchandise ...	2,298,963	2,970,633	3,121,178	3,790,397	3,170,674	2,744,189
Specie & gold & silver bullion	10,268,946	6,466,358	7,339,865	6,059,490	4,014,545	4,394,792
Total exports	12,567,909	9,436,991	10,461,043	9,849,887	7,185,219	7,138,981

From the above table it will be seen that the value of merchandise shipped to Eastern countries during 1909 is less than in any year since 1904. The trade of 1909 compared with 1907 — when it reached its greatest magnitude — shews a decrease of £1,046,208, or 27.6 per cent. This decline is general, both in regard to commodities and to the particular countries dealt with. The only item in which a steady growth of trade is shewn is butter. The trade in wheat and flour, which is hampered by the uncertainty of supplies, and the meat trade, shew material fluctuations. The exports of timber (mainly to India) during 1909, though somewhat below those of 1906, shew a substantial increase over the immediately preceding years. In regard to other items the trade of 1909 is far below the average of the preceding five years.

The following tables shew the value of the principal articles exported to each of the undermentioned eastern countries during each of the years 1904 to 1909:—

VALUE OF COMMONWEALTH EXPORTS OF MERCHANDISE TO PRINCIPAL EASTERN COUNTRIES, 1904 to 1909.

Country.	1904.	1905.	1906.	1907.	1908.	1909.
	£	£	£	£	£	£
China	314,437	399,783	216,690	404,501	264,563	116,256
India, Ceylon, Burma	572,073	759,506	983,156	825,037	901,983	745,629
Japan	581,086	581,155	510,138	706,279	267,963	432,692
Java	130,958	170,238	210,101	274,910	260,344	290,703
Philippine Islands ...	297,299	407,610	436,389	570,528	604,089	531,438
Straits Settlements	149,658	190,295	401,722	549,402	575,911	444,611
Hong Kong ...	253,452	462,046	362,982	459,740	295,821	182,880
Total ...	2,298,963	2,970,633	3,121,178	3,790,397	3,170,674	2,744,189

BUTTER.

Country.	1904.	1905.	1906.	1907.	1908.	1909.
	£	£	£	£	£	£
China	10,854	9,966	14,518	13,338	11,207	17,397
Hong Kong ...	10,994	17,073	17,007	15,443	21,713	19,696
India, Ceylon, Burma	4,897	5,615	7,152	6,766	8,627	7,373
Japan	3,014	2,233	4,475	6,464	7,063	4,375
Java	23,542	26,533	29,886	45,600	39,583	54,267
Philippine Islands ...	23,426	21,984	25,431	23,040	46,447	42,402
Straits Settlements...	7,842	10,303	11,323	25,648	17,344	20,536
Total... ...	84,569	93,707	109,792	136,299	151,984	166,046

The exports of butter given above for the year 1909 were supplied by the several States as follows:—New South Wales, £35,814; Victoria, £92,880; Queensland, £36,718; South Australia, £634.

COAL.

Country.	1904.	1905.	1906.	1907.	1908.	1909.
	£	£	£	£	£	£
China	5,805	16,643	31,652	18,474	20,041	7,470
Hong Kong ...	7,672	38,231	26,237	26,572	39,040	17,908
India, Ceylon, Burma	24,927	31,129	18,610	30,333	94,617	34,205
Japan	263	7,019	...	2,650	...	...
Java	14,313	20,881	30,848	18,893	44,614	34,132
Philippine Islands...	100,647	111,665	133,032	155,430	190,920	121,668
Straits Settlements...	13,961	34,775	96,171	66,940	111,770	78,201
Total ...	167,588	260,343	336,550	319,292	501,002	293,584

The increase in the exports of coal since 1905 is really greater than appears from the above figures, as prior to 1906 "bunker" coal was treated as an export to the country for which the ship cleared. These exports of coal are chiefly from New South Wales. The exports of coal during 1909 would, doubtless, have been greater but for the coal miners' strike in November, 1909. Mr. J. B. Suttor, Commercial Commissioner for New South Wales in the East, in his report for 1909, says, that owing to the uncertainty of deliveries from Australia, in consequence of labour troubles, the time is far distant when the trade will again reach the dimensions of recent years.

COPPER.

Country.	1904.	1905.	1906.	1907.	1908.	1909.
	£	£	£	£	£	£
China	263,046	257,800	34,297	148,979	172,196	23,100
Hong Kong ...	23,512	33,942	4,400	15,401	...	8,500
India, Ceylon, Burma	103,165	133,231	117,322	85,096	62,011	6,800
Japan	...	...	19,966	470	1,465	145
Java	601	1,964	1,266	515	2,334	318
Straits Settlements...	...	...	...	...	1,640	4,392
Total ...	390,324	426,937	177,251	250,461	239,646	43,255

The copper exported to the East during 1909 was, almost entirely, from South Australia.

GRAIN AND PULSE—WHEAT.

Country.	1904.	1905.	1906.	1907.	1908.	1909.
	£	£	£	£	£	£
China	...	...	1,662	103,593	...	10
Hong Kong ...	7,789	4,530	519	12,225	...	...
India, Ceylon, Burma	7	45	100,211	6,828	111,872	22,414
Japan	46,509	95,046	6,623	50,881	13	12,694
Java	10	6	16	1	...	34
Philippine Islands ...	...	1	181	...	...	33,404
Straits Settlements...	...	...	...	...	...	2
Total ...	54,315	99,628	109,212	173,528	111,885	68,558

The exports of wheat given above for the year 1909 were supplied by the following States:—New South Wales, £5541; Victoria, £48,180; South Australia, £14,163; Western Australia, £674.

GRAIN AND PULSE—FLOUR.

Country.	1904.	1905.	1906.	1907.	1908.	1909.
	£	£	£	£	£	£
China	247	3,129	4,539	47,037	3,221	2,671
Hong Kong ...	3,779	77,181	146,257	194,223	4,449	15,462
India, Ceylon, Burma	7,323	15,865	18,479	18,349	24,368	23,412
Japan	5,092	11,897	35,325	3,820	9	2,946
Java	65,309	93,444	107,319	144,091	119,397	132,908
Philippine Islands ...	9,348	49,887	95,569	139,958	90,653	117,825
Straits Settlements...	6,770	47,203	130,689	145,401	52,518	64,653
Total ...	97,868	298,606	538,177	692,879	294,615	359,877

The flour exported during 1909, as above, was supplied by the several States as follows:—New South Wales, £109,106; Victoria, £138,235; Queensland, £136; South Australia, £104,234; Western Australia, £8166.

GRAIN AND PULSE, OTHER THAN WHEAT AND FLOUR.

Country.	1904.	1905.	1906.	1907.	1908.	1909.
	£	£	£	£	£	£
China	2,255	635	452	3,423	226	21
Hong Kong ...	113	18,586	257	1,015	81	149
India, Ceylon, Burma	3,677	3,216	3,199	6,880	6,144	7,451
Japan	66,569	33,283	21	88	152	15
Java	599	395	890	1,563	1,380	1,735
Philippine Islands ...	877	2,265	3,614	3,675	1,847	7,651
Straits Settlements...	555	478	441	970	706	668
Total ...	74,645	58,858	8,874	17,614	10,536	17,690

The relatively large amounts shewn in the last table for Japan for 1904 and 1905 were chiefly due to exports of barley and oats. The exports given above for 1909 were supplied by the following States:—New South Wales, £3491; Victoria, £13,479; Queensland, £8; South Australia, £647; Western Australia, £65.

HAY AND CHAFF AND COMPRESSED FODDERS.

Country.	1904.	1905.	1906.	1907.	1908.	1909.
	£	£	£	£	£	£
China	196	467	145	389	74	700
Hong Kong ...	42,934	21,050	61	1,023	387	61
India, Ceylon, Burma	4,256	6,083	7,840	12,065	8,777	8,321
Japan	23,773	123	294	302	560	19
Java	197	410	481	957	1,573	984
Philippine Islands	13,803	14,392	10,138	16,300	15,340	18,550
Straits Settlements	2,705	1,828	2,116	3,513	2,843	2,049
Total ...	87,864	44,353	21,075	34,549	29,554	30,684

The exports given above for the year 1909 were supplied by the several States as follows:—New South Wales, £1345; Victoria, £28,676; Queensland, £140; South Australia, £505; Western Australia, £18.

HORSES.

Country.	1904.	1905.	1906.	1907.	1908.	1909.
	£	£	£	£	£	£
China	851	2,671	5,942	3,299	892	295
Hong Kong ...	1,023	119,504	160	205	545	888
India, Ceylon, Burma	144,782	147,427	191,089	230,187	141,486	128,887
Japan	8,095	30,215	1,990	11,715	12,234	60
Java	11,373	4,440	12,296	25,502	16,457	19,598
Philippine Islands ...	3,827	10,151	2,603	4,949	12,134	5,303
Straits Settlements...	11,195	15,107	18,022	26,952	15,491	10,339
Total ...	181,146	329,515	232,102	302,809	199,239	165,370

The horses exported to the above countries during 1909 were from the following States:—New South Wales, £41,253; Victoria, £70,335; Queensland, £45,020; South Australia, £8382; Western Australia, £380.

LEAD, PIG.

Country.	1904.	1905.	1906.	1907.	1908.	1909.
	£	£	£	£	£	£
China	18,595	29,734	18,880	20,529	28,456	13,716
Hong Kong ...	79,881	35,694	68,544	74,493	85,625	22,062
India, Ceylon, Burma	14,534	34,811	44,772	61,822	59,250	27,400
Japan	24,367	29,757	44,002	20,315	30,040	47,905
Java	105	...	41	...	106	198
Philippine Islands ...	233	127	927	330	298	4,029
Straits Settlements...	682	1,100	...	1,857	24	...
Total... ...	138,397	131,223	177,166	179,346	203,799	115,310

The above lead is almost entirely from the Broken Hill mines of New South Wales.

MEATS.—PRESERVED BY COLD PROCESS.

Country.	1904.	1905.	1906.	1907.	1908.	1909.
	£	£	£	£	£	£
China	18	99	...	...	261	1,099
Hong Kong ...	3,265	7,819	4,379	7,051	7,746	5,332
India, Ceylon, Burma	2,546	2,887	4,137	4,455	3,581	1,916
Japan	12	423	2,426	435	5,391	1,342
Java	...	...	3	884	2,539	949
Philippine Islands ...	99,558	153,825	127,621	126,498	181,460	139,260
Straits Settlements...	6	14,062	12,679	20,746	18,376	21,320
Total... ...	105,405	179,115	151,245	160,069	219,354	171,218

The exports to the above-mentioned eastern countries during 1909 of meats preserved by cold process were supplied by the following States:—New South Wales, £16,649; Victoria, £2339; Queensland; £152,230. In addition to the meat included in the above table, meat preserved by cold process to the value of £112,025 in 1906, £115,000 in 1907, and £70,358 in 1908 was exported to Asiatic Russia.

MEATS OTHER THAN MEATS PRESERVED BY COLD PROCESS.

Country.	1904.	1905.	1906.	1907.	1908.	1909.
	£	£	£	£	£	£
China	461	1,275	4,804	4,107	2,367	2,841
Hong Kong ...	5,156	4,279	815	890	622	1,249
India, Ceylon, Burma	14,250	13,520	15,859	8,211	10,054	16,267
Japan	2,471	7,410	1,284	1,376	1,076	1,104
Java	1,666	2,678	3,516	4,501	6,224	5,889
Philippine Islands ...	2,372	3,702	4,581	6,943	7,391	6,531
Straits Settlements	718	1,588	2,871	2,100	1,711	1,660
Total ...	27,094	34,452	33,730	28,128	29,445	35,541

The exports given above for the year 1909 were supplied by the following States:—New South Wales, £2462; Victoria, £955; Queensland, £31,858; South Australia, £266.

SANDALWOOD.

Country.	1904.	1905.	1906.	1907.	1908.	1909.
	£	£	£	£	£	£
China	5,719	7,008	9,299	10,886	6,238	12,180
Hong Kong ...	17,369	27,306	55,970	51,078	65,037	25,546
India, Ceylon, Burma	65	...	1,589	1,803	5,604	2,358
Straits Settlements	2,264	4,479	3,721	2,542	589	5,036
Total ...	25,417	38,793	70,579	66,309	77,468	45,120

These exports of sandalwood in 1909 were:—From New South Wales, £301; Queensland, £7363; and Western Australia, £37,456.

SKINS, HOOFS, HORNS, BONES, SINEWS, AND TALLOW.

Country.	1904.	1905.	1906.	1907.	1908.	1909.
	£	£	£	£	£	£
China	19	...	15	77	14	36
Hong Kong ...	277	1,421	1,260	838	1,706	779
India, Ceylon, Burma	2,303	5,334	11,847	8,754	5,319	2,958
Japan	23,432	48,244	56,164	60,285	35,459	40,363
Java	...	63	1,495	41	315	1,305
Philippine Islands ...	266	369	1,211	1,012	91	626
Straits Settlements	170	244	292	751	263	361
Total ...	26,467	55,675	72,284	71,758	43,167	46,428

The above exports of skins, etc., in 1909 from the several States were as follows:—New South Wales, £13,892; Victoria, £15,766; Queensland, £16,658; South Australia, £61; Western Australia, £51.

TIN ORE.

Country.	1904.	1905.	1906.	1907.	1908.	1909.
	£	£	£	£	£	£
Straits Settlements	79,345	38,466	91,743	187,702	205,114	186,191

The export of tin ore to the Straits Settlements—the centre of the world's tin production—is for the purpose of treatment, and was sent from the several States during 1909 as follows:—New South Wales, £100,887; Victoria, £10,048; Queensland, £34,836; South Australia, £11,000; Western Australia, £29,420.

TIMBER, UNDRESSED.

Country.	1904.	1905.	1906.	1907.	1908.	1909.
	£	£	£	£	£	£
China	413	54,817	81,756	19,397	13,060	26,606
Hong Kong ...	6,029	958	6	2,739	29,015	30,298
India, Ceylon, Burma	200,232	306,405	386,611	267,376	278,372	379,349
Japan	450	1,042	3,090	6,202	4,332	1,296
Java	...	82	70	330	251	56
Philippine Islands ...	23,898	22,152	12,556	65,046	30,849	3,372
Straits Settlements...	7,296	1,952	6,511	1,909	11,443	6,370
Total... ...	238,318	387,408	490,600	362,999	367,322	447,347

The above exports of timber during 1909 from the several States were as follows:—New South Wales, £58,398; Queensland, £4041; Western Australia, £355,808; Tasmania, £29,100.

WOOL.

Country.	1904.	1905.	1906.	1907.	1908.	1909.
	£	£	£	£	£	£
China	8	...	...	...	300	250
Hong Kong ...	13,262	7,740	...	...	...	...
India, Ceylon, Burma	10,518	7,928	12,084	20,115	21,708	16,657
Japan	332,602	140,704	79,860	481,771	125,408	264,630
Philippine Islands ...	...	...	135	...	...	...
Total... ...	356,390	156,372	92,079	501,886	147,416	281,537

The wool exported to the East by the several States during 1909 was as follows :— New South Wales, £238,289 ; Victoria, £18,610 ; Queensland, £24,638.

§ 7. Trade of Commonwealth since Federation.

1. **Classified Summary of Australian Trade.**—The tables hereunder present the trade of the Commonwealth during each of the years 1901 and 1905 to 1909, arranged in classes according to the nature of the goods.

It was long ago pointed out[1] that the statistical presentation of imports and exports would be increased in value by being properly arranged under categories (classes and orders). The following arrangement has been adopted, viz. :—

STATISTICAL CLASSIFICATION OF IMPORTS AND EXPORTS.

Class.	Articles.
I.	FOODSTUFFS of animal origin, excluding, however, living animals.
II.	FOODSTUFFS of vegetable origin, and common salt.
III.	BEVERAGES, non-alcoholic only, and the substances used in making them.
IV.	SPIRITS AND ALCOHOLIC LIQUORS, including spirits for industrial purposes, and such pharmaceutical preparations as are dutiable as spirits.
V.	TOBACCO, and all preparations thereof.
VI.	LIVE ANIMALS.
VII.	ANIMAL SUBSTANCES, mainly unmanufactured, which are not foodstuffs.
VIII.	VEGETABLE SUBSTANCES and non-manufactured fibres.
IX.	APPAREL, TEXTILES, and various manufactured fibres.
X.	OILS, FATS, AND WAXES.
XI.	PAINTS AND VARNISHES.
XII.	STONES AND MINERALS, used industrially.
XIII.	SPECIE, gold, silver, and bronze.
XIV.	METALS, UNMANUFACTURED, and ores.
XV.	METALS, PARTLY MANUFACTURED.
XVI.	METALS, MANUFACTURED, including machinery.
XVII.	LEATHER AND MANUFACTURES of leather, together with all substitutes therefor, and also INDIARUBBER AND INDIARUBBER MANUFACTURES.
XVIII.	WOOD AND WICKER, both raw and manufactured.
XIX.	EARTHENWARE, CEMENTS, CHINA, GLASS AND STONEWARE.
XX.	PAPER AND STATIONERY.
XXI.	JEWELLERY, TIMEPIECES, AND FANCY GOODS.
XXII.	OPTICAL, SURGICAL, AND SCIENTIFIC INSTRUMENTS.
XXIII.	DRUGS, CHEMICALS, AND FERTILISERS.
XXIV.	MISCELLANEOUS.

1. By R. M. Johnston, I.S.O., the Statistician of the State of Tasmania.

COMMONWEALTH IMPORTS ARRANGED IN CLASSES, 1901 and 1905 to 1909.

Classes.	1901.	1905.	1906.	1907.	1908.	1909.
	£	£	£	£	£	£
I. Animal foodstuffs, etc. ...	793,365	686,031	697,830	688,642	834,542	751,044
II. Vegetable „ „ ...	2,925,985	1,493,196	1,798,913	1,574,933	2,192,674	2,741,811
III. Beverages (non-alcoholic), etc. ...	1,054,324	1,134,653	1,206,216	1,549,785	1,232,292	1,409,713
IV. Alcoholic liquors, etc.	1,845,438	1,346,419	1,388,671	1,556,224	1,575,151	1,496,952
V. Tobacco, etc.	717,915	535,133	620,812	753,869	778,314	616,221
VI. Live animals	40,306	86,128	118,907	114,787	108,067	113,724
VII. Animal substances, etc. ...	124 017	310,339	456,071	576,054	400,748	336,981
VIII. Vegetable „ „ ...	459,361	578,561	717,715	863,603	944,233	997,205
IX. Apparel, etc.	12,065,367	12,017,280	13,508,844	15,367,604	13,844,687	14,765,738
X. Oils, etc.	1.290,252	903,638	1,023,410	1,192,177	1,190,816	1,337,429
XI. Paints, etc.	385,049	348,833	352,356	445,769	419,809	416,418
XII. Stones, etc.	131,095	77,115	91,676	127,372	119,248	164,069
XIII. Specie	172,395	84,320	230,957	406,875	239,088	54,197
XIV. Metals, unmanuftd., ores, etc....	984,327	1,668,072	2,381,566	1,763,202	1,178,535	1,232,610
XV. Metals, part manufactured ...	1,062,309	479,414	646,179	797,354	749,036	741,184
XVI. Metals, manufactured	7,491,636	6,550,189	7,932,675	10,531,166	10,171,607	10,372,019
XVII. Leather, etc.	523,565	673,118	924,968	1,004,822	932,033	1,080,222
XVIII. Wood, etc.	1,814,382	1,423,862	1,698,766	2,100,305	2,343,862	2,060,231
XIX. Earthenware, etc.	925,101	597,787	688,510	863,849	855,855	791,705
XX. Paper, etc.	1,731,330	1,721,174	1,838,474	2,071,344	2,234,930	2,098,638
XXI. Jewellery, etc.	1,065,348	888,391	1,045,164	1,261,046	1,102,644	1,203,528
XXII. Instruments, etc.	218,437	210,134	285,771	379,300	380,140	412,547
XXIII. Drugs, etc.	1,472,162	1,587,613	1,732,543	1,840,933	1,916,680	1,744,023
XXIV. Miscellaneous	3,140,345	2,945,331	3,357,918	3,978,018	4,054,282	4,233,687
Grand total	42,433,811	38,346,731	44,744,912	51,809,033	49,799,273	51,171,896

The exports are shewn according to the same classification, and the usual distinction is made between exports of Australian produce and re-exports. It will be seen what a small proportion of the total exports is made up by re-exports, and that the latter consist largely of specie minted from imported gold.

COMMONWEALTH EXPORTS ARRANGED IN CLASSES, AND DISTINGUISHING AUSTRALIAN PRODUCE AND THE PRODUCE OF OTHER COUNTRIES, 1901 and 1905 to 1909.

Classes.	1901.	1905.	1906.	1907.	1908.	1909.
AUSTRALIAN PRODUCE.						
	£	£	£	£	£	£
I. Animal foodstuffs, etc. ...	4,104,196	4,716,942	5,648,049	5,726,153	4,841,315	5,473,619
II. Vegetable foodstuffs, etc. ...	4,633,926	5,979,362	6,663,267	6,866,279	4,710,815	8,440,099
III. Beverages (non-alcoholic), etc....	2,598	2,067	3,750	2,810	3,539	3,883
IV. Alcoholic liquors, etc.	134,630	123,975	107,899	134,011	112,621	133,992
V. Tobacco, etc.	5,030	40,021	40,444	67,612	83,142	76,594
VI. Live animals	473,601	403,337	315,043	369,417	263,737	206,485
VII. Animal substances, etc. ...	16.754,006	22,294,516	25,696,491	32,011,364	25,431,142	28,969,998
VIII. Vegetable substances, etc. ...	142,060	265,390	281.121	255,191	231,618	195,951
IX. Apparel, etc.	42,142	42,459	61,889	75,562	65,304	78,559
X. Oils, etc.	843,755	956,109	1,071,842	1,259,021	945,113	1,422,710
XI. Paints, etc.	620	2,038	3,237	5,433	3,347	4,682
XII. Stones, etc.	1,041,974	897,354	927,560	1,343,791	1,421,304	874,628
XIII. Specie	8,884,816	4,255,703	9,851,558	5,411,572	9,819,576	4,267,070
XIV. Metals, unmanuftd., ores, etc....	8,916,269	11,936,696	13,327,210	14,163,540	11,724,275	10,324,317
XV. Metals, part manufactured ...	3,802	9,971	22,239	11,049	25,568	7,570
XVI. Metals, manufactured	117,662	138,682	149,952	156,540	225,878	207,893
XVII. Leather, etc.	660,692	554,857	591,308	569,556	573,742	524,711
XVIII. Wood, etc.	666,024	1,031,716	1,009,607	802,194	1,038,256	1,033,336
XIX. Earthenware, etc.	6,600	16,727	26,708	33,053	31,952	14,453
XX. Paper, etc.	22,171	38,911	46,734	49,730	64,738	58,853
XXI. Jewellery, etc.	67,978	156,712	148,668	149,315	141,654	141,950
XXII. Instruments, etc.	507	2,100	1,832	2,766	5,613	6,867
XXIII. Drugs, etc.	86,299	140,383	168,972	209,297	212,421	211,297
XXIV. Miscellaneous	130,418	121,730	134,594	141,244	142,233	164,194
Total	47,741,776	54,127,758	66,299,874	69,816,500	62,118,903	62,843,711

EXPORTS ARRANGED IN CLASSES, AND DISTINGUISHING AUSTRALIAN PRODUCE AND THE PRODUCE OF OTHER COUNTRIES, 1901 and 1905 to 1909.—Continued.

Classes.	1901.	1905.	1906.	1907.	1908.	1909.
OTHER PRODUCE.						
	£	£	£	£	£	£
I. Animal foodstuffs, etc.... ...	35,291	47,734	21,032	20,750	20,698	21,872
II. Vegetable foodstuffs, etc. ...	80,371	193,766	200,710	307,707	280,357	201,555
III. Beverages (non-alcoholic), etc....	43,308	54,288	63,419	72,647	62,285	82,138
IV. Alcoholic liquors, etc.	55,732	37,972	32,980	36,899	31,259	30,736
V. Tobacco, etc.	61,753	39,238	34,586	32,752	40,127	52,889
VI. Live animals	105	6,991	3,713	5,615	1,170	935
VII. Animal substances, etc. ...	10,070	4,359	12,790	9,565	7,401	3,423
VIII. Vegetable substances, etc. ...	17,625	9,568	14,709	18,688	16,172	19,888
IX. Apparel, etc.	171,014	170,308	198,098	203,950	229,070	205,936
X. Oils, etc.	42,292	46,777	44,783	42,546	65,324	39,134
XI. Paints, etc.	15,186	11,142	7,003	6,330	7,735	6,462
XII. Stones, etc.	2,043	2,000	1,883	2,179	2,308	2,941
XIII. Specie	846,921	1,421,660	2,087,901	1,474,225	660,882	1,099,221
XIV. Metals, ores, etc.	9,744	50,791	52,278	27,036	11,517	6,287
XV. Metals, part manufactured ...	13,806	26,404	58,991	54,841	20,602	32,866
XVI. Metals, manufactured	196,334	193,947	200,876	222,313	213,468	206,004
XVII. Leather, etc.	13,074	23,046	28,955	32,692	42,802	52,053
XVIII. Wood, etc.	32,135	26,149	34,436	47,791	36,627	30,095
XIX. Earthenware, etc.	23,337	18,536	22,756	26,037	15,992	12,328
XX. Paper, etc.	52,171	49,471	61,655	52,454	61,177	62,459
XXI. Jewellery, etc.	54,431	66,147	39,328	49,051	59,633	63,095
XXII. Instruments, etc.	13,555	9,329	21,660	32,108	54,775	55,742
XXIII. Drugs, etc.	42,976	35,595	45,735	47,511	48,220	46,786
XXIV. Miscellaneous	121,122	168,059	147,612	182,070	202,554	140,280
Total	1,954,396	2,713,277	3,437,889	3,007,747	2,192,155	2,475,125
TOTAL EXPORTS.						
	£	£	£	£	£	£
I. Animal foodstuffs, etc.... ...	4,139,487	4,764,676	5,669,081	5,746,903	4,862,013	5,495,491
II. Vegetable foodstuffs, etc. ...	4,714,297	6,173,128	6,863,977	7,173,986	4,991,172	8,641,654
III. Beverages (non-alcoholic), etc....	45,906	56,355	67,169	75,457	65,824	86,021
IV. Alcoholic liquors, etc.	190,362	161,947	140,879	170,900	143,880	164,728
V. Tobacco, etc.	66,783	79,259	75,030	100,364	123,269	129,483
VI. Live animals	473,706	410,328	318,756	375,032	264,907	207,420
VII. Animal substances, etc. ...	16,764,076	22,298,875	25,709,281	32,020,929	25,438,543	28,973,421
VIII. Vegetable substances, etc.	159,685	274,953	295,830	273,879	247,790	215,339
IX. Apparel, etc.	213,156	212,767	259,987	279,512	294,374	284,495
X. Oils, etc.	886,047	1,002,886	1,116,625	1,301,567	1,010,437	1,461,844
XI. Paints, etc.	15,806	13,180	10,240	11,763	11,082	11,144
XII. Stones, etc.	1,044,017	899,354	929,443	1,345,970	1,423,612	877,569
XIII. Specie	9,731,737	5,677,363	11,939,459	6,885,797	10,480,458	5,366,291
XIV. Metals, unmanuftd., ores, etc....	8,926,013	11,987,487	13,379,488	14,190,576	11,735,792	10,330,604
XV. Metals, part manufactured ...	17,608	36,375	81,230	65,890	46,170	40,436
XVI. Metals, manufactured	313,996	332,629	350,828	378,853	439,346	413,897
XVII. Leather, etc.	673,766	577,903	620,163	602,248	616,544	576,764
XVIII. Wood, etc.	638,159	1,057,865	1,044,043	849,985	1,074,883	1,063,431
XIX. Earthenware, etc.	29,937	35,263	49,464	59,090	47,944	26,781
XX. Paper, etc.	74,342	88,382	108,389	102,184	125,915	121,312
XXI. Jewellery, etc.	122,409	222,859	187,996	198,366	201,287	205,045
XXII. Instruments, etc.	14,062	11,429	23,492	34,874	60,388	62,609
XXIII. Drugs, etc.	129,275	175,978	214,707	256,808	260,641	258,083
XXIV. Miscellaneous...	251,540	289,789	282,206	323,314	344,787	304,474
Total	49,696,172	56,841,035	69,737,763	72,824,247	64,311,058	65,318,836

From the above table it will be seen that there has been a very substantial expansion in the principal divisions of the export trade of the Commonwealth. Compared with 1901 the exports in 1909 of animal foodstuffs, principally butter and meat, shew an increase of 32.78 per cent.; vegetable foodstuffs, principally wheat, shew an increase during the same period of 83.30 per cent.; animal substances—wool, skins, etc.—shew an increase of 72.84 per cent.; oils, fats, and waxes—mainly tallow—an increase of 65.00 per cent.; and wood, etc.—timber—an increase of 52.28 per cent., while the exports of gold are much lower than in any year during the decade.

§ 8. Movements of Specie and Bullion.

1. **Specie and Bullion.**—The following tables shew the value of gold and silver bullion and specie, including bronze specie, imported and exported during the years 1901 and 1905 to 1909 :—

COMMONWEALTH IMPORTS AND EXPORTS OF SPECIE AND BULLION,

1901 AND 1905 TO 1909.

Items.	1901.	1905.	1906.	1907.	1908.	1909.
IMPORTS.						
	£	£	£	£	£	£
Gold—Specie	3,710	25,098	81,790	9,967	14,426	11,566
Bullion	762,415	1,452,432	2,066,063	1,426,827	950,575	999,884
Total	766,125	1,477,530	2,147,853	1,436,794	965,001	1,011,450
Silver—Specie	158,656	53,719	140,764	375,937	209,564	32,337
Bullion	54	13,543	33,897	498	689	2,294
Total	158,710	67,262	174,661	376,435	210,253	34,631
Bronze—Specie	10,029	5,503	8,403	20,971	15,098	10,294
Grand total	934,864	1,550,295	2,330,917	1,834,200	1,190,352	1,056,375
EXPORTS.						
	£	£	£	£	£	£
Gold—Specie	9,708,037	5,656,245	11,915,685	6,857,838	10,438,665	5,349,066
Bullion	4,616,039*	5,299,748*	4,955,600*	3,685,466	3,128,073	3,024,085
Total	14,324,076	10,955,993	16,871,285	10,543,304	13,566,738	8,373,151
Silver—Specie	23,370	14,413	23,521	25,667	39,781	16,374
Bullion	922,443†	818,403†	814,874†	616,197	581,689	289,908
Total	945,813	832,816	838,395	641,864	621,470	306,282
Bronze—Specie	330	6,705	253	2,292	2,012	851
Total { Australian produce	14,423,298	10,332,512	15,584,836	9,713,190	13,526,398	7,580,158
Total { Other produce	846,921	1,463,002	2,125,097	1,474,270	663,822	1,100,126
Grand total	15,270,219	11,795,514	17,709,933	11,187,460	14,190,220	8,680,284

* Includes gold contained in matte. The value of gold contained in matte exported during 1907 was £350,601, during 1908, £761,100, and during 1909, £524,183. † Includes silver contained in matte. The value of silver contained in matte exported during 1907 was £576,959, during 1908, £489,460, and during 1909, £370,329.

COMMONWEALTH IMPORTS AND EXPORTS OF SPECIE AND GOLD AND SILVER BULLION FROM AND TO PRINCIPAL COUNTRIES, 1909.

Country.	Imports.			Exports.		
	Specie.	Bullion.	Total.	Specie.	Bullion.	Total.
	£	£	£	£	£	£
United Kingdom ...	39,747	2,141	41,888	445,242	1,957,421	2,402,663
Ceylon	...	...	...	853,300	257,332	1,110,632
Fiji	...	...	...	41,050	...	41,050
Hong Kong	...	...	...	385,056	1,997	387,053
India...	...	...	...	301,093	1,090,582	1,391,675
Natal	...	...	...	650,000	...	650,000
New Zealand	10,000	934,623	944,623	703,947	350	704,297
Papua	...	64,407	64,407	484	...	484
Total British Countries	49,747	1,001,171	1,050,918	3,380,172	3,307,682	6,687,854
China	...	...	...	30,402	5,030	35,432
Germany	1,500	...	1,500	450,000	393	450,393
Japan	...	...	...	1,450,000	...	1,450,000
Java	...	...	...	20,000	...	20,000
Philippine Islands ...	...	800	800	...	...	...
United States of America	...	207	207	...	388	388
Other Countries ...	2,950	...	2,950	35,717	500	36,217
Total Foreign Countries	4,450	1,007	5,457	1,986,119	6,311	1,992,430
Grand total	54,197	1,002,178	1,056,375	5,366,291	3,313,993	8,680,284

2. **Imports of Bullion and Specie.**—Of the total imports of bullion and specie into the Commonwealth during 1909, 94.66 per cent. was in the form of gold bullion, and was received almost entirely from New Zealand for the purpose of minting.

3. **Exports of Bullion and Specie.**—Of the total exports of bullion and specie during 1909 gold represented 71.04 per cent., 61.62 per cent. being in the form of specie, and 9.42 per cent. bullion.

The countries which appear as the largest recipients of gold from Australia are the United Kingdom, Japan, India, Ceylon, New Zealand, and Natal, in the order named, but as large amounts of gold, recorded as exported to Ceylon, are shipped *under option*, and may be despatched thence to any country needing gold, the actual amount received by each country cannot be stated.

§ 9. Effects of Prices on the Values of Exports.

1. **Significance of Price in Totals.**—In comparing the value of exports from, and also imports into, any country for a series of years the question naturally arises as to how much any variation in the aggregate value is due to fluctuations in prices, and how much to increase or decrease of actual quantities, for, in aggregates expressed only in value—the only possible method when the commodities differ—the two sources of variation are confused.

The scheme of comparison followed hereinafter is that of the British Board of Trade. This is to select all such articles of export as are recorded by units of quantity, and to apply to the quantities exported during each year the average price per unit ruling in some year, arbitrarily taken for the purposes of comparison as the basic year. The ratio which the total actually recorded for the year under review bears to the total obtained by applying to the quantities of the year under review the average prices ruling during the basic year, may be called the "price-level" of the latter—as compared with the former—for the group of commodities considered, and may be taken (so it is assumed in the method of the British Board of Trade) as a measure of the effect of the change of price in the intervening period. Since the value of the articles used in the calculations represents as much as 84 per cent. of all exports during 1909—after excluding specie and gold bullion, which are not subject to price changes—a fairly extended basis on which an estimate of the effect of prices over the full range of exports can be founded is afforded.[1]

2. **Effect of Prices.**—The following table shews the values of exports as actually recorded in each year, together with the values computed on the assumption that the prices of 1901 were maintained.[2] The table also shews the yearly "price-levels," based upon the results so ascertained.

This table obviously furnishes a measure of the influence of prices on the value of exports of each year since 1901. Column IV.,—values computed on 1901 prices—represents the volume of exports (less specie and gold bullion), expressed in the common denomination of value, and from the figures therein it will be seen that, had the prices of 1901 remained constant, the value of the exports of merchandise during the year 1909, for example, would have been £46,973,200 only, instead of £56,928,460—the value actually recorded. The difference between these amounts (£9,955,260) results from rise of prices,[3] of 21.2 per cent. (i.e., from 1000 to 1212) in the price of commodities for the period intervening between 1901 and 1909.

EFFECT OF PRICES ON THE VALUE OF COMMONWEALTH EXPORTS AND EXPORT PRICE-LEVELS FOR THE PERIOD 1901 to 1909.

(BASIC YEAR, 1901.)

Year.	Exports of Specie and Gold.	Other Exports.		Total Exports (including Specie and Bullion).		Price Levels.[1] Year 1901 = 1000.
		Values as Recorded.	Values Computed on 1901 Prices.	Values as Recorded.	Values Computed on 1901 Prices.	
I.	II. £	III. £	IV. £	V. £	VI. £	VII.
1901 ...	14,347,776	35,348,396	35,348,396	49,696,172	49,696,172	1000
1902 ...	14,568,640	29,346,447	27,375,976	43,915,087	41,944,616	1072
1903 ...	18,408,702	29,841,410	26,697,120	48,250,112	45,105,822	1118
1904 ...	16,914,691	40,571,224	36,139,840	57,485,915	53,054,531	1123
1905 ...	10,977,111	45,863,924	38,465,210	56,841,035	49,442,321	1192
1906 ...	16,895,059	52,842,704	42,295,310	69,737,763	59,190,369	1249
1907 ...	10,571,263	62,252,984	47,557,141	72,824,247	58,128,404	1309
1908 ...	13,608,531	50,702,527	43,072,809	64,311,058	56,681,340	1177
1909 ...	8,390,376	56,928,460	46,973,200	65,318,836	55,363,576	1212

1. These are index numbers for the total group of exports, excluding specie and gold bullion.

3. **Influence of Quantity and Price on Total Increased Value of Exports.**—The estimated actual and relative effects of the influence of—(i.) increase or decrease in the exports of specie and gold bullion, (ii.) increase or decrease of *quantities* of other exports, (iii.) variation of prices on the value of the exports, of each year compared with 1901, are shewn below :—

1. This basis is thus subject only to the limitations of the fundamental assumption and to its limitation to 84 per cent. of the total.
2. The method of the British Board of Trade is clearly valid for certain purposes, and is adopted because it widens the field of comparison. It is not, however, universally valid.
3. On the fundamental assumption.

ANALYSIS OF INFLUENCE OF QUANTITY AND PRICE ON INCREASE OR DECREASE IN COMMONWEALTH EXPORTS, 1902 to 1909, COMPARED WITH 1901.

Year.	Particulars.	Variation above (+) or below (—) 1901 Exports due to change in:— Export of Specie and Gold.	Quantity of Export other than Specie and Gold.	Prices of Export other than Specie and Gold.	Total Variation above (+) or below (—) Value of 1901 Exports.
1902.	Variation, actual ... ... £	+220,864	—7,972,420	+1,970,471	—5,781,085
	Relative magnitude of variation. Total variation taken as 100	+3.82	—137.90	+34.08	—100
	Variation, per cent.	+1.54	— 22.55	+ 7.20	—11.63
1903.	Variation, actual ... ... £	+4,060,926	—8,651,276	+3,144,290	—1,446,060
	Relative magnitude of variation. Total variation taken as 100	+280.81	—598.25	+217.44	—100
	Variation, per cent.	+ 28.30	—24.47	+11.78	—2.91
1904.	Variation, actual ... ... £	+2,566,915	+791,444	+4,431,384	+7,789,743
	Relative magnitude of variation. Total variation taken as 100	+32.95	+10.16	+56.89	+100
	Variation, per cent.	+17.90	+ 2.24	+12.26	+15.67
1905.	Variation, actual ... ... £	—3,370,665	+3,116,814	+7,398,714	+7,144,863
	Relative magnitude of variation. Total variation taken as 100	—47.18	+43.62	+103.56	+100
	Variation, per cent.	—23.48	+ 8.82	+ 19.24	+14.37
1906.	Variation, actual ... ... £	+2,547,283	+6,946,914	+10,547,394	+20,041,591
	Relative magnitude of variation. Total variation taken as 100	+12.71	+34.66	+52.63	+100
	Variation, per cent.	+17.76	+19.65	+24.94	+40.32
1907.	Variation, actual ... ... £	—3,776,513	+12,208,745	+14,695,843	+23,128,075
	Relative magnitude of variation. Total variation taken as 100	—16.32	+52.78	+63.54	+100
	Variation, per cent.	—26.32	+34.55	+30.90	+46.56
1908.	Variation, actual ... ... £	—739,245	+7,724,413	+7,629,718	+14,614,886
	Relative magnitude of variation. Total variation taken as 100	— 5.06	+52.85	+52.21	+100
	Variation, per cent.	— 5.15	+21.85	+17.72	+29.43
1909.	Variation, actual ... ... £	—5,957,400	+11,624,804	+9,955,260	+15,622,664
	Relative magnitude of variation. Total variation taken as 100	—38.13	+74.40	+63.73	+100
	Variation, per cent.	—41.52	+32.89	+21.19	+31.43

From the above figures it will be seen that the exports of 1909, for example, of specie and gold bullion compared with 1901, shew a decrease of 41.52 per cent., other exports (merchandise) shew an increase of 32.89 per cent. in quantities, and an increase of 21.19 per cent. in the group-prices. These several influences effect an aggregate increase of £15,622,664 or 31.43 per cent. over 1901 as follows:—by increased quantities of merchandise, £11,624,804 (74.40 per cent.); by increased prices, £9,955,260 (63.73 per cent,); accompanied by a decrease of £5,957,400 (38.13 per cent.) in the exports of specie and gold.

10. External Trade of Australia and other Countries.

1. **Essentials of Comparisons.**—Direct comparisons of the external trade of any two countries are possible only when the general conditions prevailing therein, and the scheme of recording, are sensibly identical. For example, in regard to the mere matter of record, it may be observed that in one country the value of imports may be the value at the port of shipment, while in another the cost of freight, insurance, and charges may be added thereto. Or again, the values of imports and exports in the one may be declared by merchants, whereas in the other they may be the official prices, fixed from time to time by a commission constituted for the purpose. The figures relating to the

external trade of any country are also affected in varying degree by the extent to which they include transit or re-export trade. Including bullion and specie, the transit trade of Belgium, for example, represents 40.92 per cent. of the gross trade recorded; of Switzerland, 44.05 per cent.; of France, 21.11 per cent.; and of the United Kingdom, 15.78 per cent.; whereas in Australia the same element represents only 4 per cent., and in New Zealand even less.

2. **"Special Trade" of Various Countries.**—Special trade may be defined, agreeably to the practice of the British Board of Trade, as (*a*) imports entered for consumption in the country (as distinguished from imports for transhipment or re-export), and (*b*) exports of domestic products.

In the following table the figures relate, as nearly as is possible, to imports entered for consumption in the various countries quoted, and to exports of their domestic products. It is to be noted, however, that these figures do not unequivocally denote the same thing throughout, since, in the United Kingdom and other manufacturing countries, raw or partly manufactured materials are imported as for home consumption, and, after undergoing some process of manufacture or further modification, are re-exported as domestic production, and further, the statistical records of many countries do not distinguish between bullion and specie imported for the use of the particular country (home consumption) and the amount in transit, nor between the exports of that produced within the country and that re-exported. Nevertheless a comparison of this character reveals approximately the extent of the external trade which otherwise would not be manifest.

From the following table it may be seen that, for the particular years indicated, the value of the total trade per inhabitant was greatest in New Zealand (£35 19s. 0d. per head); the next country in order of value per inhabitant was Belgium (£32 18s. 10d. per head), followed by Switzerland (£29 14s. 6d. per head). Australia comes fourth (£25 16s. 3d. per head), and is some way in advance of the next country, viz., the Argentine Republic (£23 16s. 10d. per head):—

TRADE OF VARIOUS COUNTRIES (IMPORTS FOR HOME CONSUMPTION AND EXPORTS OF DOMESTIC PRODUCTS, INCLUDING BULLION AND SPECIE), FOR LATEST AVAILABLE YEAR.

Country.	Year ended.	Trade.			Trade per Inhabitant.								
		Imports.	Exports.	Total.	Imports.			Exports.			Total.		
		£	£	£	£	s.	d.	£	s.	d.	£	s.	d.
COMMONWEALTH OF AUSTRALIA	31/12/09	48,696,771	62,843,711	111,540,482	11	5	5	14	10	10	25	16	3
United Kingdom	„	539,832,138	378,180,347	918,012,485	11	19	11	8	8	1	20	8	0
Canada	31/3/10	77,029,530	58,716,102	135,745,632	14	14	8	8	3	8	22	18	4
New Zealand	31/12/09	15,475,659	19,462,936	34,938,595	15	18	6	20	0	6	35	19	0
United States of America ...	30/6/09	278,453,280	351,585,710	630,038,990	3	3	4	4	0	0	7	3	4
Argentine Republic	31/12/08	60,325,000	73,210,000	133,535,000	10	15	5	13	1	5	23	16	10
Austria-Hungary	„	103,400,000	96,741,000	200,141,000	2	2	1	1	19	4	4	1	5
Belgium	„	136,375,000	100,977,000	237,352,000	18	18	6	14	0	4	32	18	10
Denmark	„	31,097,000	24,657,000	55,754,000	11	10	2	9	5	5	20	15	7
France	„	272,554,000	209,384,000	481,938,000	6	18	11	5	6	8	12	5	7
German Empire	„	397,124,000	318,674,000	715,798,000	6	6	1	5	1	2	11	7	3
Italy	„	117,653,000	70,011,000	187,664,000	3	9	5	2	1	4	5	10	9
Japan	„	48,251,000	39,664,000	87,915,000	0	19	6	0	16	1	1	15	7
Norway	31/12/07	19,808,000	12,661,000	32,469,000	8	10	5	5	8	11	13	19	4
Portugal	„	13,891,000	7,050,000	20,941,000	2	13	5	1	7	1	4	0	6
Spain	31/12/08	38,662,000	36,449,000	75,111,000	1	19	8	1	17	4	3	17	0
Sweden	31/12/07	37,894,000	29,148,000	67,042,000	7	1	6	5	8	10	12	10	4
Switzerland	31/12/08	61,359,000	43,392,000	104,751,000	17	8	3	12	6	3	29	14	6
Uruguay	„	7,212,000	7,767,000	14,979,000	6	2	3	6	11	8	12	13	11

3. **External Trade as a Measure of Prosperity.**—External trade as a measure of prosperity is by no means unequivocal. Comparisons can be accepted as furnishing satisfactory indications of the relative progress or welfare of different countries, only

when taken together with all other facts that should be considered in this connection It is, for example, obvious that the external trade of a community depends not only upon the aggregate of its requirements, but also upon the extent to which it fails to supply requirements from its own resources. A community largely self-contained, for example, may have but a small external trade per head, and yet, by virtue of its capacity to produce and manufacture its own raw material, may actually enjoy greater prosperity and a higher standard of living than another country whose external trade per head is much greater. The same observation applies equally to comparisons of the trade of the same country at different periods. A young country, the industries and export trade of which are mainly connected with raw or natural products, may, for example, through internal development, find the growth of its external trade diminishing per head of population without necessarily suffering any real diminution in the well-being of its people. And it is further obvious that circumstances may arise when enlargement of both imports and exports is actually a consequence of temporary economic difficulties. For example, in 1903, owing to shortage in the local supply, it became necessary to *import* wheat and flour into Australia to the value of £2,556,968, and to meet the charges for this by equivalent *exports*, the effect, considered *per se*, being to enlarge both. In this case the increase is not an evidence of prosperity.

4. **Australian Trade Evidence of Prosperity.**—Despite the above suggestions regarding the necessity of caution, so as to avoid hasty inferences based upon aggregate trade, a consideration of its general characteristics over a number of years, and of its marked development, will suffice to shew that Australian affairs are progressing rapidly and most favourably, especially when it is taken into account that there are no counter-balancing elements of disadvantage.

11. Trade of the United Kingdom with Australia.

1. **General.**—The failure of the United Kingdom to maintain the position formerly held by her in the import trade of Australia has, during recent years, become a matter of more than ordinary interest in both countries. In June, 1905, Mr. R. J. Jeffray was sent here as a "Commissioner of the Advisory Committee on Commercial Intelligence of the British Board of Trade," to investigate the conditions and prospects of British trade with this country, and early in 1908 Mr. Ben H. Morgan was sent on a similar errand by the Manufacturers' Association of Great Britain, and in particular to report on:—(i.) The extent and possibilities of the market, with a view to (*a*) increasing export trade, (*b*) establishing branch factories inside the tariffs; (ii.) the extent and condition of local industries; (iii.) the nature and condition of foreign competition; (iv.) transport services, with special reference to shipping "rings" and "conferences"; (v.) the operation of local tariffs and effects of preferences. In December, 1908, Mr. C. Hamilton Wickes reached here as a permanent Commissioner of the British Board of Trade, for the purpose of advising British manufacturers of the particular requirements of the Australian markets, with a view to improving the trade between the Commonwealth and the United Kingdom.

In a previous issue of this work (No. 1, 1907) reference was made to the report of Mr. Jeffray, in which he gave the following principal causes of the success of the foreign manufacturer in the Australian market:—(i.) Greater promptitude and attention to orders; (ii.) greater readiness to adapt their goods to the requirements of customers; (iii.) more efficient representation in Australia; (iv.) better package of goods; (v.) more attractive appearance of goods; (vi.) lower freights.

Mr. Morgan reports "that the most important reason for the growth of foreign trade in Australia is that the foreign manufacturer is able to quote lower prices than the British manufacturer for goods of equal value." That the foreign manufacturer is able to do this, is, he contends, due to the following, viz.:—(i.) *Protection.* By virtue of

protection for his home market "the foreign manufacturer can depend on a definite consumption therein, and is thus able to produce in larger quantities, and therefore more cheaply." (ii.) *Lower shipping rates and raw materials.*—"Direct shipping services have been established with foreign countries, who carry goods generally at lower rates than British shipping companies carry British goods, and that, following the development of manufacturing industries in foreign countries and the establishment of those cheap shipping facilities, the markets for raw materials are being diverted to those countries . . . . and by carrying at lower rates, give their manufacturers an advantage in price in such raw materials." After quoting many instances of goods being charged freights from Liverpool to Australia much above those charged on similar goods from New York or Hamburg *via* Liverpool to Australia, Mr. Morgan says:—"This shipping question is one of vital interest to manufacturers, and the time has come when they must, if they are to retain their position in export markets, interest themselves directly in freight matters, instead of leaving them as heretofore to merchants and shipping agents."

Mr. Wickes, addressing the British delegates attending the seventh Congress of the Chambers of Commerce of the Empire, alluding to freights, said:—"I doubt if there is any question which so illustrates the want of organisation among our commercial community," and he suggested that there should be a keener study of freight rates from other parts of the world, and also a closer co-operation of British manufacturers, for the more economical distribution of their manufactures.

2. **Proportion of Trade from United Kingdom.**—The percentages given in the following table shew the proportions of the imports into Australia from the United Kingdom, and from the other countries mentioned, during each of the years 1886 to 1909:—

PROPORTION OF COMMONWEALTH IMPORT TRADE FROM VARIOUS COUNTRIES, 1886 to 1909.

Year.	Percentage Proportions from—					Year.	Percentage Proportions from—				
	United K'dom.	British Poss'ns.	Germ'y.	United States.	Total Foreign C'tries.		United K'dom.	British Poss'ns.	Germ'y.	United States.	Total Foreign C'tries.
1886	73.37	11.23	2.05	6.11	15.40	1898	66.62	10.88	5.86	10.16	22.50
1887	72.26	12.50	2.28	5.37	15.24	1899	61.85	11.75	6.07	13.00	26.40
1888	71.62	12.03	2.71	6.48	16.35	1900	61.28	11.28	6.54	12.16	27.44
1889	68.98	13.45	3.65	6.67	17.57	1901	59.47	11 22	6.59	13.80	29.31
1890	68.08	12.66	4.77	6.54	19.26	1902	58.64	13.22	6.53	12.27	28.14
1891	70.15	11.40	4.53	6.79	18.45	1903	52.51	13.17	6.24	16.84	34.32
1892	70.74	11.37	4.32	6.04	17.89	1904	60.68	12.22	7.17	12.40	27.10
1893	72.78	12.14	3.40	4.98	15.08	1905	60.17	14.04	6.42	11.70	25.79
1894	71.92	11.96	3.78	5.39	16.12	1906	59.39	15.09	7.16	10.36	25.52
1895	71.62	11.46	4.42	5.95	16.92	1907	61.59	12.93	6.85	11.33	25.48
1896	68.28	10.74	5.31	8.59	20.98	1908	60.10	12.83	7.05	12.13	27.07
1897	66.22	10.72	5.75	10.10	23.06	1909	60.92	13.45	6.51	9.78	25.63

In order to draw accurate conclusions from the above table, however, special attention must be given to the nature of imports from the United States, since the imports from that country have in some years been increased by imports of breadstuffs, a trade in which the United Kingdom could not participate. The years affected by the imports of breadstuffs were 1886, 1889, 1896, 1897, and 1903. Increased imports of such items as kerosene oil and timber also tend to increase the proportion of imports from the United States without any prejudicial effect on the trade of the United Kingdom. Similar modification is not necessary in regard to Germany, as the nature of the imports from that country is substantially the same as from the United Kingdom.

It has already been pointed out in this chapter that, prior to the year 1905, imports into the Commonwealth were recorded only against the country whence they were directly imported. Although the values of direct imports do not afford satisfactory data, it is

necessary for any comparison extending further back than 1905 to use such figures. These figures are unsatisfactory on account of the varying proportions of indirect trade.

In order to furnish a comparison free from the influence of such trade as, from its nature, is not open to the United Kingdom, the following table, shewing the direct imports during the years 1886, 1906 and 1909 of the principal classes of goods which enter largely into the trade of the countries named, has been prepared. It may be mentioned that the imports for the year 1886 were extracted from the "Statistical Registers" of the several States for a comparison—published in a previous issue—with the year 1906, and as their compilation involved a large amount of labour they are again utilised for comparison with the year 1909.

PRINCIPAL *DIRECT* IMPORTS INTO THE COMMONWEALTH FROM THE UNITED KINGDOM, GERMANY, AND THE UNITED STATES, 1886, 1906 and 1909.

Nature of Imports.	Year.	United Kingdom.	Germany.	United States.	All Countries.
		£	£	£	£
Foodstuffs of animal origin ...	1886	348,950	5,603	70,959	674,296
	1906	293,950	24,319	146,781	697,830
	1909	360,474	34,706	171,420	751,044
Alcoholic liquors	1886	1,801,200	82,185	82,730	2,126,877
	1906	1,053,154	109,426	24,367	1,388,671
	1909	1,178,616	117,899	9,581	1,496,952
Apparel, textiles, etc. (incl. boots)	1886	9,845,182	54,350	15,336	10,316,989
	1906	11,066,201	418,776	221,362	13,508,844
	1909	12,138,965	387,701	212,525	14,765,738
Metals unmanufactured and partly manufactured*	1886	403,809	2,241	...	430,950
	1906	696,331	62,945	34,927	927,785
	1909	666,613	73,421	49,157	971,616
Manufactures of metals (including machinery)	1886	4,616,924	94,832	311,342	5,190,901
	1906	5,144,912	926,314	1,379,662	7,932,675
	1909	7,168,863	996,373	1,564,692	10,372,019
Paper and stationery	1886	1,260,531	21,038	39,700	1,340,627
	1906	1,207,729	261,684	288,509	1,838,474
	1909	1,444,637	208,382	212,967	2,098,638
Jewellery, timepieces, fancy goods	1886	659,833	24,206	57,477	789,127
	1906	740,850	140,950	59,151	1,045,164
	1909	814,992	179,414	58,140	1,203,528
Earthenware, cements, etc. ...	1886	755,907	78,762	24,711	938,476
	1906	316,252	227,390	37,344	688,510
	1909	413,819	188,613	36,564	791,705
Drugs, chemicals, fertilisers, etc.	1886	511,216	8,660	33,382	766,243
	1906	887,325	193,615	82,789	1,732,543
	1909	735,407	158,792	89,065	1,744,023
Leather, and mfs. thereof and substitutes therefor, including indiarubber	1886	285,601	6,357	53,588	363,332
	1906	682,238	70,028	116,356	924,968
	1909	727,706	162,368	107,339	1,080,222
Total above-mentioned imports ...	1886	20,489,153	378,234	689,225	22,937,818
	1906	22,088,942	2,435,447	2,391,248	30,685,464
	1907	26,347,224	2,728,122	3,020,028	36,318,861
	1908	24,558,163	2,638,279	3,044,691	34,444,436
	1909	25,650,092	2,507,669	2,511,450	35,275,485
Total imports (less bullion and specie)	1886	24,974,939	699,075	2,087,213	33,885,284
	1906	26,437,768	3,202,990	4,633,331	42,413,995
	1907	31,508,851	3,551,255	5,868,930	49,974,833
	1908	29,703,021	3,508,845	6,039,499	48,608,921
	1909	31,129,940	3,329,641	5,002,923	50,115,521

* Mainly pig iron and bar and rod iron.

PERCENTAGE ON TOTAL COMMONWEALTH IMPORTS OF PRINCIPAL *DIRECT* IMPORTS FROM UNITED KINGDOM, GERMANY, AND UNITED STATES, 1886, 1906 and 1909.

Nature of Imports.	Year.	United Kingdom.	Germany.	United States.	All Countries
Foodstuffs of animal origin	1886	51.75	0.83	10.52	100
	1906	42.12	3.48	21.02	100
	1909	47.99	4.62	22.82	100
Alcoholic liquors	1886	84.69	3.86	3.89	100
	1906	75.84	7.88	1.75	100
	1909	78.76	7.88	0.64	100
Apparel, textiles, etc. (including boots)	1886	95.44	0.53	0.15	100
	1906	81.93	3.10	1.64	100
	1909	82.21	2.63	1.44	100
Metals unmanufactured and partly manufactured	1886	93.72	0.52	—	100
	1906	75.06	6.78	3.76	100
	1909	68.60	7.56	5.06	100
Manufactures of metals	1886	88.93	1.83	6.00	100
	1906	64.85	11.68	17.39	100
	1909	69.12	9.61	15.09	100
Paper and stationery	1886	94.03	1.57	2.96	100
	1906	65.69	14.23	15.69	100
	1909	68.82	9.93	10.15	100
Jewellery, timepieces, and fancy goods	1886	83.62	3.07	7.28	100
	1906	70.89	13.48	5.66	100
	1909	67.71	14.91	4.83	100
Earthenware, cements, etc.	1886	80.55	8.39	2.63	100
	1906	45.93	33.03	5.42	100
	1909	52.26	23.82	4.62	100
Drugs, chemicals, fertilisers, etc. ...	1886	66.71	1.13	4.36	100
	1906	51.22	11.18	4.78	100
	1909	42.16	9.10	5.11	100
Leather and mfs. thereof, and substitutes therefor, including indiarubber	1886	78.60	1.75	15.30	100
	1906	73.75	7.60	12.58	100
	1909	67.38	15.04	9.94	100
Total above-mentioned imports ...	1886	89.31	1.65	3.01	100
	1906	71.98	7.94	7.79	100
	1907	72.15	7.47	8.27	100
	1908	71.29	7.66	8.84	100
	1909	72.70	7.10	7.12	100
Total imports (less bullion and specie)	1886	73.71	2.06	6.16	100
	1906	62.34	7.55	10.92	100
	1907	63.05	7.10	11.74	100
	1908	61.11	7.32	12.42	100
	1909	62.10	6.64	9.98	100

The foregoing table shews that the share of the United Kingdom, as indicated by the records according to "Country of Shipment," in the trade of those classes of goods enumerated—representing over 80 per cent. of the total imports from that country—has declined from 89.31 per cent. of the whole in 1886 to 72.70 per cent. in 1909. The value of these imports from the United Kingdom has increased from £20,489,153 in 1886 to only £25,650,092 in 1909, or by 25.20 per cent., while the total value of similar imports has increased from £22,937,818 to £35,275,485, or by 53.70 per cent. Had the United Kingdom maintained her position as in 1886 the value of her share of this trade should have been £31,500,000 in 1909 instead of £25,650,092.

The following table gives an analysis of the imports during the years 1906-1909 according to the countries of origin of the goods, and has been extended to include the products of Belgium and France. It is probable that in 1905* (the first year in which countries of origin were recorded), and in a lesser degree in 1906, some goods were credited to the United Kingdom which were really manufactured elsewhere. This matter is more particularly referred to in a subsequent section dealing with the effect of preference.

IMPORTS INTO THE COMMONWEALTH OF PRODUCTS OR MANUFACTURES OF THE UNITED KINGDOM, BELGIUM, FRANCE, GERMANY, AND THE UNITED STATES OF AMERICA DURING THE YEARS 1906 to 1909.

Nature of Imports.	Year.	United Kingdom.	Belgium	France.	Germany.	U.S. of America.	All Countries
		£	£	£	£	£	£
Foodstuffs of animal origin	1906	175,077	122	17,350	9,224	166,643	697,830
	1907	177,767	800	4,637	7,859	153,599	688,642
	1908	327,047	348	5,103	9,983	227,308	834,542
	1909	309,642	4,505	5,431	6,737	181,435	751,044
Alcoholic liquors, etc. ...	1906	889,157	146	248,364	67,774	25,187	1,388,671
	1907	1,015,026	3,175	271,295	71,921	26,043	1,556,224
	1908	1,007,600	914	281,529	77,379	18,182	1,575,151
	1909	956,882	1,637	250,042	80,283	13,053	1,496,952
Apparel (including boots), textiles, etc.	1906	9,306,334	69,381	745,202	933,867	373,599	13,508,844
	1907	9,900,952	138,685	889,545	1,344,415	444,594	15,367,604
	1908	8,791,471	131,317	786,394	1,252,337	349,885	13,844,687
	1909	9,231,968	155,078	857,808	1,299,041	355,768	14,765,738
Metals unmanufactured or partly manufactured, excluding gold and silver bullion	1906	687,195	37,533	4,975	108,577	36,138	927,785
	1907	823,259	57,818	2,124	112,818	46,258	1,133,231
	1908	665,128	62,685	3,995	130,627	61,026	976,307
	1909	667,327	73,495	2,447	116,017	50,015	971,616
Manufactures of metals ...	1906	4,870,096	174,542	22,856	1,040,682	1,588,483	7,932,675
	1907	6,767,768	129,686	29,779	1,184,232	2,022,584	10,531,166
	1908	6,550,743	148,692	44,185	1,142,443	1,938,008	10,171,607
	1909	6,786,806	137,710	47,947	1,190,998	1,732,858	10,372,019
Paper and stationery ...	1906	1,101,636	8,199	9,073	282,175	326,561	1,838,474
	1907	1,199,123	22,273	10,351	317,544	326,779	2,071,344
	1908	1,217,008	31,923	13,656	310,006	292,426	2,234,930
	1909	1,250,166	23,800	14,889	236,970	231,215	2,006,638
Jewellery, timepieces and fancy goods	1906	525,184	12,365	66,945	133,108	82,852	1,045,164
	1907	516,552	48,170	109,515	239,363	131,750	1,261,046
	1908	418,400	49,423	127,831	210,814	87,201	1,102,644
	1909	482,473	38,396	107,915	227,625	97,125	1,203,528
Earthenware, cements, glass, etc.	1906	303,478	71,626	19,727	227,922	41,860	688,510
	1907	399,074	119,915	28,357	206,705	68,036	863,849
	1908	411,913	103,776	26,918	215,293	40,928	855,855
	1909	378,049	119,633	27,312	176,082	41,866	791,705
Drugs, chemicals, fertilisers	1906	832,309	11,542	165,272	210,864	122,754	1,732,543
	1907	838,227	16,853	181,258	200,269	146,825	1,840,933
	1908	819,949	12,034	224,398	161,594	132,406	1,916,680
	1909	735,854	9,847	173,753	168,590	132,596	1,744,023
Leather and manufactures thereof and substitutes therefor, including india-rubber (excluding boots)	1906	382,425	229	38,629	108,992	256,902	924,968
	1907	414,302	1,496	40,490	117,833	275,235	1,004,822
	1908	367,839	202	49,534	145,461	227,260	932,033
	1909	383,930	551	54,079	210,307	294,128	1,080,222
Total above-mentioned imports	1906	19,072,891	385,685	1,338,393	3,183,185	3,020,979	30,685,464
	1907	22,052,050	538,781	1,567,351	3,802,959	3,641,703	36,318,861
	1908	20,577,098	541,319	1,563,543	3,655,937	3,374,630	34,444,436
	1909	21,183,097	564,652	1,541,623	3,712,650	3,130,059	35,275,485
Total imports (less bullion and specie)	1906	22,755,482	446,251	1,473,360	3,927,262	5,603,215	42,413,995
	1907	26,441,942	632,486	1,742,612	4,622,933	6,763,531	49,974,833
	1908	25,042,810	636,450	1,775,389	4,482,119	6,574,380	48,608,921
	1909	25,809,347	662,132	1,784,312	4,537,112	5,934,295	50,115,521

* For 1905 figures see Official Year Book No. 3. † Mainly pig iron and bar and rod iron.

In the above table the totals only, of the several classes of goods mentioned, have been dealt with. On pages 647 *et seq.* will be found a more detailed analysis, shewing the principal items of United Kingdom origin, in which goods favoured by preferential tariff rates are distinguished from other imports.

COMMONWEALTH PERCENTAGE ON TOTAL IMPORTS, OF IMPORTS OF PRODUCTS OR MANUFACTURES OF THE UNITED KINGDOM, BELGIUM, FRANCE, GERMANY, AND THE UNITED STATES OF AMERICA DURING THE YEARS 1906 to 1909.

Nature of Imports.	Year.	United Kingdom.	Belgium.	France.	Germany.	U.S.A.	All Countries
Foodstuffs of animal origin	1906	25.08	0.02	2.49	1.32	23.61	100
	1907	25.81	0.12	0.67	1.14	22.30	100
	1908	39.19	0.04	0.61	1.20	27.25	100
	1909	41.23	0.60	0.72	0.90	24.16	100
Alcoholic liquors, etc. ...	1906	64.06	0.01	17.89	4.88	1.81	100
	1907	65.21	0.20	17.43	4.62	1.67	100
	1908	63.96	0.05	17.82	4.91	1.15	100
	1909	63.92	0.11	16.71	5.36	0.87	100
Apparel (including boots), textiles, etc.	1906	68.91	0.51	5.51	6.91	2.77	100
	1907	64.44	0.90	5.79	8.75	2.89	100
	1908	63.56	0.95	5.68	9.04	2.53	100
	1909	62.53	1.05	5.81	8.80	2.41	100
Metals unmanufactured or partly manufactured, excluding gold and silver bullion	1906	74.08	4.05	0.54	11.70	3.90	100
	1907	72.66	5.10	0.19	9.96	4.08	100
	1908	68.20	6.42	0.41	13.38	6.25	100
	1909	68.68	7.56	0.25	11.94	5.15	100
Manufactures of metals ...	1906	61.39	2.20	0.29	13.12	20.02	100
	1907	64.27	0.64	0.28	11.25	19.21	100
	1908	64.40	1.46	0.43	11.23	19.05	100
	1909	65.43	1.38	0.46	11.48	16.71	100
Paper and stationery ...	1906	59.92	0.45	0.49	15.35	17.76	100
	1907	57.89	1.07	0.50	15.33	15.77	100
	1908	54.45	1.43	0.61	13.87	13.08	100
	1909	59.97	1.13	0.71	11.29	11.02	100
Jewellery, timepieces, and fancy goods	1906	50.25	1 18	6.40	19.31	7.93	100
	1907	40.97	3.82	8.68	18.98	10.42	100
	1908	37.95	4.48	11.59	19.12	7.91	100
	1909	40.09	3 19	8.97	18.92	8.07	100
Earthenware, cements, glass, etc.	1906	44.07	10.40	2.86	33.10	6.08	100
	1907	46.19	13.88	3.28	23.93	7.87	100
	1908	48.00	12.13	3.15	25.16	4.78	100
	1909	47.75	15 11	3.45	22.24	5.29	100
Drugs, chemicals, and fertilisers	1906	48.04	0.66	9.54	12.17	7.10	100
	1907	45.54	0.91	9.85	10.88	7.98	100
	1908	42.78	0.62	11.71	8.43	6.91	100
	1909	42.20	0.56	9.96	9.67	7.60	100
Leather and manufactures thereof and substitutes therefor, including india-rubber (excluding boots)	1906	41.35	0.02	4.17	11.78	27.78	100
	1907	41.24	0.14	4.03	11 73	27.40	100
	1908	39.47	0.02	5.31	15.61	24.39	100
	1909	35.55	0.05	5.01	19.47	27.23	100
Total above-mentioned articles	1906	62.16	1.26	4.36	10.37	9.84	100
	1907	60.72	1.48	4.32	10.47	10.03	100
	1908	59.74	1.57	4.54	10.61	9.80	100
	1909	60.05	1.60	4.37	10.52	8.87	100
Total imports... ...	1906	53.65	1.05	3.47	9.26	13.21	100
	1907	52.91	1.27	3.49	9.25	13.53	100
	1908	51.52	1.31	3.65	9 22	13.54	100
	1909	51.50	1 32	3.56	9.05	11.84	100

A comparison of the results given in the immediately preceding tables with those given on pages 642 and 643 discloses the value of the export trade of other countries which reaches the Commonwealth through the United Kingdom.

3. **Significance of Increase of Trade with other Countries.**—It has been suggested that the larger proportion of imports now received from foreign countries is due to the establishment and increase of direct shipping with the countries concerned, and that trade formerly received through English ports is now received direct. From the Australian records it is impossible to ascertain the value of the indirect trade with foreign countries through the United Kingdom prior to 1905. The returns of the British Board of Trade, however, shew the exports from the United Kingdom to Australia of foreign and colonial products distinct from the domestic exports, and from this source the table hereunder has been compiled.

It is proper here to mention that, taken in quinquennial periods, the values of the total exports from the United Kingdom to Australia—after making allowance for freight and charges—are in very close agreement with the corresponding import values recorded in this country.

AVERAGE ANNUAL VALUE OF MERCHANDISE AND BULLION AND SPECIE DESPATCHED FROM THE UNITED KINGDOM TO AUSTRALIA, 1886 to 1909.

Years.	Merchandise.			Bullion and Specie.	Total.	Percentage Proportion of Foreign and Colonial Produce.
	United Kingdom Produce.	Foreign and Colonial Produce.				
		Re-exported.	Transhipped under Bond.			
	£	£	£	£	£	
1886-1890 ...	19,510,884	2,344,309	874,249	90,135	22,819,577	14.16
1891-1895 ...	15,376,625	1,756,065	556,287	402,256	18,091,233	13.07
1896-1900 ...	18,353,571	1,919,912	445,552	117,146	20,836,181	11.42
1901-1905 ...	18,271,705	2,226,321	750,520	79,014	21,327,560	14.01
1906-1909 ...	22,816,688	2,882,447	1,187,658	189,188	27,075,981	15.03

From the above table it will be seen that the average value and the proportion of foreign goods despatched to Australia through the United Kingdom during the last four years is greater than the average of the years 1886-90. During the quinquennium 1886-90 the average value of foreign and colonial produce despatched each year from the United Kingdom to Australia was £3,218,558, equal to 14.16 per cent. of all goods so despatched, while during the period 1906-9 the corresponding amount was £4,070,105, or 15.03 per cent. It is therefore apparent that the increase of direct imports from foreign countries has not been, in the aggregate, at the expense of the indirect trade via Great Britain.

4. **Preferential Tariff.**—The Tariff Act of 1908, at present in force, provides preferential tariff rates in favour of goods produced or manufactured in the United Kingdom in respect of 294 tariff items or sub-items.

In the analyses given in this section the results shewn are those obtained by applying the tariff rates to the imports of the year, whether entered for consumption or re-exported. The re-exports are, however, relatively small.

The following table presents an analysis of the imports during 1909, distinguishing those affected—favourably or adversely – by the preferential provisions of the tariff, from those not affected :—

COMMONWEALTH IMPORTS, 1909—PREFERENTIAL AND NON-PREFERENTIAL.

Particulars.	Country of Origin.			
	United Kingdom.	British Possessions.	Foreign Countries.	Total.
Imports affected by preferential tariff	£	£	£	£
Free	5,241,830	—	—	5,241,830
Dutiable	11,240,202	319,900	7,875,832	19,435,934
Total	16,482,032	319,900	7,875,832	24,677,764
Impts. not affected by preferential tariff				
Free	6,383,897	3,633,361	5,627,264	15,644,522
Dutiable	2,943,418	1,686,958	5,162,859	9,793,235
Total	9,327,315	5,320,319	10,790,123	25,437,757
Total merchandise	25,809,347	5,640,219	18,665,955	50,115,521
Bullion and specie	53,271	999,559	3,545	1,056,375
Total imports	25,862,618	6,639,778	18,669,500	51,171,896

Of the total imports of merchandise (£50,115,521) £24,677,764, or 49.23 per cent., would be affected by the preferential tariff.

The imports during 1909 of United Kingdom origin, favoured by preference, amounted to £16,482,032, representing 63.86 per cent. of the total imports of merchandise from that country, against £15,895,721 during 1908. Under the preferential tariff these imports would be subject to duty equivalent to an average *ad valorem* rate of 13.29 per cent., as compared with an average rate of 18.35 per cent. which the same goods would be required to pay under the general tariff rates—an advantage of £834,268 in the amount of duty. The actual amount of rebate allowed on United Kingdom goods entered for home consumption during 1909, under the varying rates of duty, was £827,251.

The following tables give the comparative results of an application of the preferential tariff rates and the general tariff rates to the imports from the United Kingdom, British Possessions and foreign countries respectively:—

IMPORTS AFFECTED BY PREFERENTIAL TARIFF RATES.

FROM UNITED KINGDOM.

Particulars.	Imports.	Duty which would be payable under—			
		Preferential Tariff.		General Tariff.	
	£	£	Rate %	£	Rate %
(A) Free	5,241,830	...	...	268,138	5.12
(B) Dutiable	11,240,202	2,190,643	19.49	2,756,773	24.53
Total	16,482,032	2,190,643	13.29	3,024,911	18.35

IMPORTS AFFECTED BY PREFERENTIAL TARIFF RATES.

FROM BRITISH POSSESSIONS.

Particulars.	Imports.	Duty which would be payable under—			
		General Tariff.		Preferential Tariff.	
	£	£	Rate %	£	Rate %
Imports similar to group A above	48,267	2,416	5.01	...	...
" " " B "	271,633	55,514	20.44	42,048	15.48
Total	319,900	57,930	18.11	42,048	13.14

FROM FOREIGN COUNTRIES.

	£	£	Rate %	£	Rate %
Imports similar to group A above	1,052,627	52,695	5.01	...	...
" " " B "	6,823,205	1,641,446	24.06	1,262,998	18.51
Total	7,875,832	1,694,141	21.51	1,262,998	16.03

The proportion of the imports from British Possessions adversely affected by the preference to the United Kingdom, though nearly double that of 1908, is relatively small, representing only 5.67 per cent. of the imports of merchandise from those countries. The increase in the value of imports in the preferential group from British Possessions is due to an import from Canada of steel rails, valued at £132,964, and from South Africa of explosives, valued at £19,863. The surcharge of duty on imports from British Possessions during 1909 amounted to £15,882. This sum would, on the basis of the trade of 1909, represent the loss of revenue involved in an extension of the preference given to the United Kingdom to the rest of the Empire, as in the preferential scheme of New Zealand. The British Possessions chiefly affected are India, Canada, Straits Settlements, and New Zealand.

The surcharge on imports, affected by preference, from foreign countries during 1909 would amount to £431,143, as against £458,658 during 1908.

5. **Effect of Preference.**—Owing to the short time during which the preferential tariff has been in operation and to the general dislocation of trade consequent on the introduction of a new tariff which was not finally passed until the 3rd June, 1908, it is doubtful whether any definite conclusions can yet be safely drawn in regard to the effects of preferential treatment on the trade of the United Kingdom, though there are undoubtedly indications that it has been, in many instances, of assistance to British manufactures. The alterations in the classification and grouping of items in the new tariff also present a further difficulty, in many instances, in making correct comparisons with former years. The following results must, therefore, be considered as approximate only.

It may also be mentioned here that the system of recording imports according to "country of origin," was introduced only from the beginning of 1905, and it is probable that in the earlier period of its operation, some goods, imported through the United Kingdom, were wrongly described as of United Kingdom origin. When the question of revenue became involved and a more exact description of the goods was insisted upon, goods which might formerly have been accepted and recorded as British would be correctly classed as foreign.

A comparison of the returns of the British Board of Trade (shewing the exports of produce or manufacture of the United Kingdom to Australia) with the import returns of the Commonwealth supports the belief that the proportion of the trade credited to the United Kingdom in the following tables for the years 1905 and 1906 is too high. If this supposition be correct the apparent decline in the proportion of British goods will be somewhat modified.

The following table shews in regard to imports of United Kingdom origin, that, while the results for the later years are in substantial agreement, those ascertained from the Commonwealth import returns for 1905 are 8.35 per cent. above those ascertained from the returns of the British Board of Trade.

COMMONWEALTH IMPORT RETURNS AND BRITISH BOARD OF TRADE EXPORT RETURNS OF UNITED KINGDOM PRODUCE COMPARED, 1905 to 1909.

Year.	Exports. Board of Trade Returns.	Add 10 per cent. Freight, etc.	Value for Comparison.	Commonwealth Import Returns.
	£1,000	£1,000	£1,000	£1,000
1905	16,991	1,699	18,690	20,251
1906	20,229	2,023	22,252	22,755
1907	24,097	2,410	26,507	26,442
1908	22,942	2,294	25,236	25,043
1909	23,999	2,400	26,399	25,809

The following comparative tables shew the proportion of imports—preferential and non-preferential, respectively—recorded as of United Kingdom origin during the years 1905-1909 :—

PREFERENTIAL IMPORTS, 1905 to 1909.

Year.	Country of Origin.							
	United Kingdom.		British Possessions.		Foreign Countries.		Total.	
	£	%	£	%	£	%	£	%
1905* ...	13,268,596	69.56	151,463	0.78	5,656,611	29.66	19,076,670	100
1906* ...	14,643,287	68.58	165,699	0.78	6,545,603	30.64	21,354,589	100
1907 ...	17,049,196	66.08	210,545	0.82	8,539,885	33.10	25,799,626	100
1908 ...	15,895,721	65.70	162,097	0.67	8,136,004	33.63	24,193,822	100
1909 ...	16,482,032	66.80	319,900	1.29	7,875,832	31.91	24,677,764	100

* See modified figures in the lower table on page 650.

From the proportions shewn above it would appear that the United Kingdom's share in this trade has materially declined since 1905, but, as already mentioned, the accuracy of these figures is open to doubt. Particular instances in which manufactures of foreign countries have obviously been credited to the United Kingdom during the years 1905 and 1906 are alluded to later. A comparison of the trade of 1909 with that of 1908 shews that in the preferential group the United Kingdom has gained 1.1 per cent. of the total, her share being 66.80 per cent. in the latter year, as compared with 65.70 in the former. This appears to indicate the effect of the preferential treatment, for a similar comparison in the non-preferential group shows an opposite result; the United Kingdom's share having fallen from 50.70 per cent. in 1908 to 49.94 per cent. in 1909. Taken together the result shews a net increase of 0.25 per cent., *i.e.*, from 59.36 per cent. in 1908 to 59.61 per cent. in 1909. There is, however, some danger of error in allocating the cause of such small variations between single years.

COMMONWEALTH NON-PREFERENTIAL IMPORTS,* 1905 to 1909.

Year.	Country of Origin.							
	United Kingdom.		British Possessions.		Foreign Countries.		Total.	
	£	%	£	%	£	%	£	%
1905† ...	6,843,465	51.98	1,621,168	12.31	4,701,383	35.71	13,166,016	100
1906† ...	7,952,039	50.81	2,017,296	12.89	5,680,078	36.30	15,649,413	100
1907 ...	9,223,549	51.12	2,277,889	12.64	6,543,733	36.24	18,045,171	100
1908 ...	9,006,821	50.70	2,299,775	12.95	6,456,040	36.35	17,762,636	100
1909 ...	9,137,146	49.94	2,500,859	13.66	6,659,699	36.40	18,297,704	100

* In order to obtain a more satisfactory comparison only goods of a character similar to those affected by preferential rates have been included in this table. Articles such as fruits, grain, cocoa beans, raw coffee, tea, sugar, unmanufactured tobacco, hides, fibres, kerosene, timber, etc., which are not produced in the United Kingdom, have been excluded. The proportion of these goods recorded as of United Kingdom origin during 1909 was only 2.66 per cent. † See modified figures in next table.

As in the preferential group it would appear from the Commonwealth records of the countries of origin of imports that there has also been a decline in the non-preferential group since 1905, but if the value of the total imports of United Kingdom origin during 1905 be modified on the basis of the export returns of the British Board of Trade, a better comparison with more gratifying results is obtained. These results are shewn below.

If, for the reasons mentioned, it be conceded that the figures of the British Board of Trade for 1905 and 1906 with 10 per cent. added are nearer the truth than the Commonwealth records for those years, and in the subsequent years the Commonwealth figures be accepted, the results would be approximately as follows:—

IMPORTS OF UNITED KINGDOM ORIGIN, 1905 to 1909.

Year.	Preferential Imports.		Non-Preferential Imports.*		Total.*	
	Value.	Per cent. on Total Pref. Imports.	Value.	Per cent. on Total Non-Pref. Imports.	Value.	Per cent.
	£	%	£	%	£	%
1905†	12,220,000	63.98	6,321,000	48.18	18,541,000	57.55
1906†	14,316,000	66.80	7,774,000	50.02	22,090,000	59.74
1907	17,049,000	66.08	9,224,000	51.12	26,273,000	59.93
1908	15,896,000	65.70	9,007,000	50.70	24,903,000	59.36
1909	16,482,000	66.80	9,137,000	49.94	25,619,000	59.61

* See note to preceding table. † The figures for these years are based on export returns of the United Kingdom.

From this table it will be observed that instead of declining, as indicated by the Commonwealth records, the position of the United Kingdom has been, on the whole, slightly improved; the improvement being more pronounced in the preferential division.

The principal classes of imports affected by preference are "apparel, textiles and manufactured fibres," and "manufactures of metals, including machinery." Together these two classes represent 71 per cent. of all imports affected, the former class representing 47 per cent. and the latter 24 per cent. The following analysis gives the particulars of the imports of these groups, as recorded, for the past five years:—

COMMONWEALTH IMPORTS OF APPAREL, TEXTILES, AND MANUFACTURED FIBRES,

1905 to 1909.

PREFERENTIAL.

Year.	Country of Origin.							
	United Kingdom.		British Possessions.		Foreign Countries.		Total.	
	£	%	£	%	£	%	£	%
1905	7,586,841	76.98	42,442	0.43	2,228,104	22.60	9,857,387	100
1906	8,240,338	75.92	59,402	0.55	2,554,765	23.53	10,854,505	100
1907	8,725,908	70.20	68,764	0.54	3,637,169	29.26	12,431,841	100
1908	7,716,800	68 35	54,667	0.48	3,519,641	31.17	11,291,108	100
1909	8,038,772	69.26	58,599	0.50	3,509,876	30.24	11,607,247	100

NON-PREFERENTIAL.

1905	903,653	42.28	971,931	45.47	261,815	12.25	2,137,399	100
1906	1,045,608	39.72	1,251,056	47.53	335,389	12.75	2,632,053	100
1907	1,153,666	39.66	1,327,829	45.64	427,325	14.70	2,908,820	100
1908	1,074,671	42.08	1,168,473	45.76	310,435	12.16	2,553,579	100
1909	1,193,196	37.77	1,380,056	43.70	585,239	18.53	3,158,491	100

The above table shews a slight improvement in 1909 as compared with 1908, in the position of the United Kingdom in the supply of apparel and textiles affected by preference, accompanied by a very considerable decline in her position in the non-preferential division.

The detailed tables which are appended, shew the influence of the principal items on the relative position of the United Kingdom in this class of trade. In the preferential division the improvement compared with 1908 has been general, the only exceptions being in hats, etc., cotton and linen piece goods, and in the indefinite item "other" apparel. This latter item does not permit of a closer examination. On the other hand the movement in the non-preferential class has been equally general in the opposite direction, the only items shewing improvement being minor articles for boots and shoes, hessians, tents and flags, and bags and sacks—lines which do not represent large values to the United Kingdom.

The important position held by British Possessions in the non-preferential division of this class is due to the supply of hessians and bags and sacks by India. In 1908 binder twine to the value of £11,446, and in 1909 to the value of £17,338, was also imported from New Zealand. The decline, in the later years under review, in the position held by British Possessions, is due to the fact that the ratio of the value of bags and sacks to the total value of the group has been a decreasing one. In 1906 bags and sacks represented 42.78 per cent. of the total of the non-preferential division of this class, whereas in 1909 the proportion had fallen to 37.88 per cent. In 1909, too, the United Kingdom secured a larger share of the hessian trade in opposition to India and of the trade in binder twine in opposition to New Zealand, notwithstanding that New Zealand's sales of this article increased in the Commonwealth by 51.4 per cent. over the previous year.

The value and proportion of the more important items, included in the above groups of apparel and textiles, recorded as of United Kingdom manufacture, are given below:—

COMMONWEALTH IMPORTS OF PREFERENTIAL ITEMS OF APPAREL AND TEXTILES RECORDED AS OF UNITED KINGDOM ORIGIN, 1905 to 1909.

Items.	1905.		1906.		1907.		1908.		1909.	
	Value.	Per cent.	Value.	Per cent.	Value.	Per cent.	Value.	Per cent.	Value.	Per cent.
Apparel—	£	%	£	%	£	%	£	%	£	%
Boots and shoes ...	162,347	62.11	184,915	65.40	195,426	66.28	174,153	64.87	187,690	68.22
Gloves	100,070	46.70	80,981	34.80	48,168	17.07	38,320	15.00	49,148	16.75
Hats, caps, & bonnets	289,327	82.80	284,783	77.06	260,853	63.87	208,143	70.36	176,908	66.36
Socks and stockings of wool, &c. ...	285,055	98.16	305,132	97.98	348,307	97.23	*402,040	80.35	367,669	95.73
Trimmings & Ornaments	136,212	54.60	128,135	42.40	86,317	25.73	54,860	26.69	49,130	31.30
Other apparel ...	996,830	78.30	1,083,054	75.32	1,040,855	67.28	905,922	68.26	906,615	66.90
Textiles, etc. — Piece goods — Cotton and linen, n.e.i.	2,568,736	91.40	3,023,372	91.18	3,266,665	89.90	2,946,313	89.71	3,208,581	88.71
Woollen or containing wool... ...	1,562,627	81.04	1,705,086	83.36	1,849,153	80.62	1,580,004	78.74	1,595,809	81.18
Silk or containing silk (not containing wool) ...	181,888	24.97	99,834	14.19	106,008	11.73	63,676	7.61	89,534	10.31
Velvets, velveteens, plushes, ribbons, lace, etc. ...	279,832	48.44	234,577	40.56	235,214	27.67	233,384	23.92	278,786	25.48
Flannelettes ...	190,657	81.35	203,669	80.30	228,240	81.85	193,142	79.63	127,466	81.40
Other textiles & manufactured fibres ...	833,260	88.68	906,800	88.75	1,060,702	85.23	916,843	83.98	1,001,346	85.35
Total apparel & textiles	7,586,841	76.98	8,240,338	75.92	8,725,908	70.20	7,716,800	68.35	8,038,772	69.26

* Includes cotton socks which were subject to preferential rates to the 28th April only. No separate record was made of the imports of cotton socks during 1908.

The items "gloves," "trimmings, and ornaments," and "silk and velvet piece goods," appear to furnish definite instances of misdescription in the earlier years under review. These goods are largely gathered from other parts of the world into the United Kingdom, whence they are shipped to Australia. The records for 1909 shew that, of the total imports into the Commonwealth of these four items taken conjointly, only 19.34 per cent. was of United Kingdom origin, while as much as 83.63 per cent. was shipped from that country. Under these circumstances it appears probable that, until the question of revenue arose (viz. in August, 1907), some portion of these goods, merely packed in the United Kingdom, were recorded as of British manufacture. This suggestion is again supported by the British trade returns, for although the items presented therein are not identical with the items in the Commonwealth returns, it may be seen that the exports from the United Kingdom to Australia of British silk manufactures bear to the imports into the Commonwealth of silk, etc., piece goods the same ratio in 1908 as in 1905, and in 1909 the two records are consistent.

COMMONWEALTH IMPORTS OF NON-PREFERENTIAL ITEMS OF APPAREL AND TEXTILES RECORDED AS OF UNITED KINGDOM ORIGIN, 1905 to 1909.

Items.	1905.		1906.		1907.		1908.		1909.	
	Amount.	Per cent.	Amount.	Per cent.	Amount.	Per cent.	Amount.	Per cent.	Amount	Per cent.
	£	%	£	%	£	%	£	%	£	%
Apparel—Socks & stockings of cotton ...	45,916	34.82	53,766	35.68	48,207	29.66	*	...	40,639	25.06
Other	80,567	89.11	80,272	81.11	97,228	76.00	67,067	72.94	56,474	48.50
Minor Articles for—										
Boots and shoes ...	31,860	62.80	29,791	55.82	33,340	56.73	31,885	57.07	31,735	60.87
Hats and caps ...	54,798	52.50	61,062	45.44	42,937	29.78	39,279	31.81	58,236	30.70
Umbrellas	10,937	97.17	13,021	98.72	20,902	96.26	33,387	97 86	32,456	96.24
Other apparel	162,767	77.02	174,638	73.93	153,600	65.83	129,852	57.15	156,040	48.38
Piece goods—Canvas & duck	76,761	39.16	114,710	46.88	107,792	89.05	142,855	92.26	164,095	90.97
Hessians...					47,840	19.14	27,304	14.63	51,593	24.65
Other	42,812	82.50	48,311	78.24	69,551	79.28	80,134	83.69	84,222	74.92
Sewing silks, threads, etc	253,006	91.43	290,472	89.35	317,519	87.76	315,109	89.50	312,217	89.88
Tents and flags	1,991	94.94	2,076	87.75	4,147	91.49	5,159	85.64	3,816	96.58
Cordage and twine ...	132,471	87.47	159,182	86.36	200,030	90.03	200,449	88.09	196,241	84.43
Bags and sacks	9,767	1.14	18,307	1.63	10,573	0.95	2,191	0.22	5,432	0.45
Total	903,653	42.28	1,045,608	39.72	1,153,666	39.66	1,074,671	42.08	1,193,196	37.77

* Not recorded apart from woollen socks and stockings in this year.

COMMONWEALTH IMPORTS OF METALS AND MANUFACTURES OF METALS (INCLUDING MACHINERY), 1905 to 1909.

PREFERENTIAL.

Year.	Country of Origin.							
	United Kingdom.		British Possessions.		Foreign Countries.		Total.	
	£	%	£	%	£	%	£	%
1905 ...	2,690,043	72.77	13,597	0.37	993,252	26.86	3,696,892	100
1906 ...	3,132,437	73.35	17,492	0.41	1,121,241	26.24	4,271,170	100
1907 ...	4,401,531	75.73	25,926	0.45	1,384,530	23.82	5,811,987	100
1908 ...	4,271,659	75.53	9,765	0.17	1,374,303	24.30	5,655,727	100
1909 ...	4,517,994	76.95	144,933	2.47	1,208,538	20.58	5,871,465	100

NON-PREFERENTIAL.

	£	%	£	%	£	%	£	%
1905 ...	1,793,631	51.40	129,747	3.72	1,566,421	44.88	3,489,799	100
1906 ...	2,416,705	53.22	92,978	2.05	2,030,556	44.73	4,540,239	100
1907 ...	3,180,805	54.90	209,725	3.62	2,403,455	41.48	5,793,985	100
1908 ...	2,942,084	53.85	189,632	3.47	2,332,059	42.68	5,463,775	100
1909 ...	2,934,101	53.91	201,511	3.70	2,307,684	42.39	5,443,296	100

COMMONWEALTH IMPORTS OF PRINCIPAL ITEMS OF METALS, ETC., INCLUDING MACHINERY, RECORDED AS OF UNITED KINGDOM ORIGIN, 1905 to 1909.

PREFERENTIAL.

Items.	1905.		1906.		1907.		1908.		1909.	
	Amount.	%	Amount.	%	Amount.	%	Amount.	%	Amount.	%
	£		£		£		£		£	
Iron & steel girders, beams, etc. ...	22,104	53.09	55,453	67.65	64,366	68.88	72,990	65.28	77,648	82.61
Plate & sheet (corrugated or galvd.)	871,716	96.59	1,032,118	96.54	1,279,440	94.36	1,098,985	97.42	1,375,433	95.36
Rails, fishplts., etc.	111,344	54.03	132,522	38.93	562,610	89.46	530,678	66.93	436,872	54.40
Tinned plates ...	214,947	99.97	257,112	99.48	247,650	99.55	284,564	99.97	284,446	99.91
	1,220,111	89.38	1,477,205	88.41	2,154,066	92.57	1,987,217	85.75	2,174,399	82.86
Machinery ...	506,033	60.53	570,497	64.18	775,673	62.15	922,615	72.64	1,015,163	77.06
Cutlery and plated-ware	234,055	83.37	257,799	82.82	318,324	83.63	284,732	83.00	320,067	84.65
Other man'factures of metals ...	729,844	60.07	826,936	62.62	1,153,468	62.15	1,077,095	62.44	1,008,365	65.20
	1,469,932	63.05	1,655,232	65.65	2,247,465	64.50	2,284,442	68.44	2,343,595	72.18
Total	2,690,043	72.77	3,132,437	73.35	4,401,531	75.73	4,271,659	75.53	4,517,994	76.95

NON-PREFERENTIAL.

Iron and steel—										
Pig	98,392	94.22	146,368	96.45	162,815	90.16	89,341	87.51	129,212	92.68
Bar, rod, angle, and tee ...	278,356	82.10	347,676	78.80	475,748	79.31	425,900	74.20	393,939	70.88
Hoop	21,911	52.81	27,164	50.89	42,513	62.40	29,800	51.28	25,248	41.35
Ingots, blooms & slabs	3,539	27.08	5,130	18.20	10,470	26.23	3,107	10.36	7,556	23.69
Plate and sheet— plain	98,293	65.63	111,998	55.98	179,928	62.98	131,379	60.84	148,537	59.46
Scrap	38,036	99.96	49,305	97.54	44,989	88.64	45,194	94.59	37,125	93.17
	538,527	78.52	687,641	74.34	916,463	74.83	724,721	70.50	741,617	68.80
Machinery—										
Agricltral. dairying, etc. ...	63,493	13.15	53,385	12.51	53,491	10.32	61,964	14.21	81,458	17.10
Engines—										
Gas and oil ...	53,535	72.96	98,983	76.18	113,035	73.70	79,553	70.03	103,554	74.66
Sewing machines	15,468	13.16	13,608	9.66	12,789	6.76	64,249	36.85	86,038	45.70
Other machinery and mach. tools	187,112	50.02	250,974	49.97	324,889	50.55	542,484	54.16	472,127	52.61
Tools of trade ...	138,102	49.75	161,523	47.32	219,907	45.98	233,980	43.51	210,365	52.69
Wire—Iron & steel	31,077	9.49	40,578	7.80	52,365	9.67	71,282	12.66	75,435	13.64
Other ...	27,304	47.57	25,558	54.16	96,335	72.82	73,112	59.93	49,348	48.86
Wire netting ...	220,083	65.67	378,847	72.60	400,708	68.90	309,853	67.56	216,186	58.85
Other metals and manfact. thereof	518,930	68.45	705,608	71.64	990,823	74.44	780,886	73.68	897,973	72.21
	1,255,104	44.76	1,729,064	47.84	2,264,342	49.55	2,217,363	49.98	2,192,484	50.22
Total	1,793,631	51.40	2,416,705	53.22	3,180,805	54.90	2,942,084	53.85	2,934,101	53.91

The records of the imports of metals and metal manufactures may be accepted as free from the defects previously alluded to in regard to apparel and textiles. The proportion of metal goods of foreign origin received via the United Kingdom is relatively small.

The above tables shew that in the supply of metals and metal manufactures the position of the United Kingdom is, in both preferential and non-preferential, slightly better than in 1908. Indeed, in both divisions the improvement has been fairly constant throughout the period, although somewhat more marked in the preferential division. In connection with the supply of metals and metal manufactures, it is of interest to observe that in the less-finished forms of metal goods, whether affected by preference or not, the relative position of the United Kingdom, as indicated by group totals, has declined, whereas, in the supply of machinery and finished articles, again irrespective of preference, it has improved. It should also be remarked that the general tendency of the movement of the relative position of the United Kingdom was in evidence before the introduction of preference, both in the downward movement of the simpler manufactures and in the upward movement of the more complex.

It might also be suggested that the failure of the United Kingdom to maintain for an indefinite period—without extreme protective measures in her favour—the same relatively high position—in an increasing volume of trade and in opposition to the highly organised competition of other nations of more recent industrial development—formerly held by her should not, *per se*, be taken as evidence of her waning industrial or commercial virility.

Taking together the two groups of the simpler forms of iron and steel manufactures, enumerated in the above tables, it appears that in 1905, of a total trade of £2,051,077 the United Kingdom supplied £1,758,638, or 85.74 per cent., while in 1909, when the total value of the same trade had increased to £3,702,080, she supplied £2,916,016, representing, however, only 78.86 per cent. Thus, though the United Kingdom increased her sales to the Commonwealth by £1,157,378 while similar sales by all other countries increased only by £493,625, the relative proportion of the trade supplied by the United Kingdom fell from 85.74 per cent. in 1905 to 78.86 per cent. in 1909. Moreover, in iron and steel plates, pig and scrap iron, and tinned plates representing, in 1909, a total value of £2,156,170, the United Kingdom had 91.58 per cent.—practically a monopoly. That such a monopoly should be preserved to her, in the face of the circumstances referred to above and in view of the rapidly increasing volume of the world's trade, is scarcely to be expected.

The smaller proportion, supplied by the United Kingdom in 1909 compared with 1908, of the less complex forms of iron and steel affected by preference is due to increased competition in the supply of steel rails. In the supply of plate and sheet iron and steel, also, some encroachment was made by the United States, though the United Kingdom still had as much as 95.36 per cent. of this trade.

The countries from which the principal supplies of rails, fishplates, etc., were drawn, and the percentage proportion supplied by each, are shewn in the following table:—

IMPORTS INTO THE COMMONWEALTH OF IRON AND STEEL RAILS, Etc., 1905 TO 1909.

Country of Origin.	1905.		1906.		1907.		1908.		1909.	
	Value.	Per cent.	Value.	Per cent.	Value.	Per cent.	Value.	Per cent.	Value.	Per cent.
	£	%	£	%	£	%	£	%	£	%
United Kingdom ...	111,344	54.03	132,522	38.93	562,610	89.46	530,678	66.92	436,872	54.39
Canada	—	—	—	—	—	—	—	—	132,963	16.55
Belgium	19,354	9.39	95,939	28.18	19,599	3.12	9,852	1.24	21,693	2.70
Germany	21,164	10.27	36,575	10.74	37,969	6.04	44,057	5.56	70,201	8.74
Russia...	—	—	—	—	—	—	36,300	4.58	—	—
Utd. States of America	53,163	25.80	75,144	22.08	7,705	1.22	171,996	21.69	140,300	17.47
Other Countries ...	1,066	0.51	255	0.07	1,048	0.16	45	0.01	1,131	0.15
Total	206,091	100.00	340,435	100.00	628,931	100.00	792,928	100.00	803,160	100.00

In the similar group of commodities in the non-preferential division the item chiefly affecting the position is bar, rod, angle, and tee iron and steel, in the supply of which Belgium, Germany, and the United States of America have each secured increased shares.

The value of the imports of bar etc. iron and steel, and its percentage on the total value of such imports during 1909 from each of these countries was:—Belgium, £52,353=9.40 per cent.; Germany, £57,096=10.27 per cent.; United States, £39,789=7.16 per cent.

The large increase in the United Kingdom's share of the imports of sewing machines requires special explanation. In the tariff as introduced on the 8th August, 1907, it was provided that sewing machines manufactured in the United Kingdom should be free, while those from other countries should pay 10 per cent. *ad valorem*. On the 16th November, 1907, the preferential provisions were deleted and all sewing machines became free. In the meantime, in order to procure the advantage of the tariff, the largest firm manufacturing these machines and operating both in the United States and in the United Kingdom, transferred its Australian business from its American to its British branch. Notwithstanding the cessation of preference, and in the face of higher freight charges from Liverpool direct than from New York via Liverpool, this firm, rather than again disturb its business arrangements, continued to supply the Australian trade, in certain classes of machines, from its British branch. This transfer, however, did not carry a corresponding amount of employment to the British operatives, for the reason that, while the Australian business was transferred to the United Kingdom, a corresponding amount of trade—unaffected by any preferential tariffs—formerly supplied by the British branch, was transferred to America.

A further list of items, preferential and non-preferential, recorded as of United Kingdom origin is appended:—

PRINCIPAL OTHER PREFERENTIAL IMPORTS, 1905 to 1909.

Article.	1905.		1906.		1907.		1908.		1909.	
	Amount	Per cent.	Amount	Per cent.	Amount	Per cent.	Amount	Per cent.	Amount	Per cent.
	£		£		£		£		£	
Milk—Preserved, concentrated, etc.	21,748	11.06	21,660	11.44	13,727	8.05	149,673	83.02	135,240	92.64
Confectionery, cocoa, chocolate, etc.	211,201	73.63	230,110	69.03	270,311	67.59	257,913	70.12	296,102	69.71
Gelatine, glue, cements	20,961	51.24	20,912	43.90	19,115	33.14	19,475	45.81	21,367	47.72
Yarns	78,217	78.55	96,706	80.09	128,166	78.42	122,985	82.88	112,409	80.34
Oils	22,745	14.59	27,646	12.87	25,226	11.69	23,526	9.73	24,928	9.39
Paints	46,998	61.98	52,629	73.01	65,278	68.22	70,787	69.67	71,413	73.02
Varnishes	49,574	86.63	55,411	89.34	66,387	83.83	60,076	83.10	63,487	84.83
Slates—roofing	8,764	38.23	14,587	56.74	26,615	62.65	21,920	59.25	20,444	73.26
Leather	39,782	90.76	51,341	77.86	60,550	83.02	50,981	84.96	51,889	84.62
Rubber, m'factures of	128,146	70.08	124,310	60.06	136,463	58.82	138,310	51.55	130,118	38.94
Furniture, etc.	57,521	28.10	60,010	27.43	69,200	27.09	43,463	25.13	63,786	37.10
Wood manufactures	21,015	18.43	24,574	24.55	40,229	26.97	34,036	22.94	35,601	31.95
China & earthenware	155,528	72.80	156,501	64.40	216,869	64.38	198,738	63.46	172,382	66.28
Glass and glassware	69,572	30.71	66,050	25.09	90,609	27.02	78,359	27.58	68,925	25.28
Cement (Portland)	26,266	40.52	25,576	35.64	23,638	46.33	48,517	53.74	45,153	58.14
Tiles—roofing	9,576	35.76	10,716	39.54	17,766	46.22	18,671	53.51	20,851	57.63
Paper	116,275	47.97	120,796	42.37	280,836	52.33	270,159	51.01	281,975	57.46
Stationery	140,370	74.22	189,940	72.48	194,555	64.70	180,664	62.42	163,980	63.85
Timepieces, jewellery, and fancy goods	480,918	61.27	477,815	54.71	483,120	46.58	383,826	43.15	427,331	46.97
Arms	21,216	35.28	25,112	32.01	28,392	35.34	51,718	60.07	39,356	46.01
Percussion caps, cartridges, etc.	67,570	50.62	84,096	50.12	82,999	54.72	76,846	63.67	74,823	54.33
Detonators and fuse	42,597	93.10	40,634	95.42	42,984	98.06	36,797	96.28	45,950	97.94
Dynamite, gunpowder	350,004	78.26	347,380	77.68	277,394	82.39	293,002	77.98	324,699	76.02
Bags, baskets, etc.	28,796	49.05	38,003	42.51	42,038	33.59	44,000	33.55	47,026	31.42
Brushware	76,364	62.16	87,546	60.06	89,025	53.58	57,255	54.16	56,981	56.23
Blackings, etc.	35,334	62.68	40,882	64.01	55,502	66.39	38,961	72.24	23,359	68.17
Electrical articles and materials	138,002	67.08	179,123	69.28	233,439	68.72	271,453	73.68	164,446	74.16
Matches	44,217	27.56	34,491	26.43	44,848	28.74	59,264	32.68	57,716	37.03
Pianos and parts	17,460	9.46	24,773	10.24	43,663	13.94	24,886	10.11	34,549	13.16
Oilmen's stores	32,726	43.62	37,055	52.68	57,124	63.63	55,777	71.21	63,427	68.22
Vehicles, bicycles, tricycles, etc.	205,009	55.02	268,067	61.95	418,019	65.32	416,637	61.14	490,957	61.56

PRINCIPAL OTHER NON-PREFERENTIAL IMPORTS, 1905 to 1909.

Article.	1905.		1906.		1907.		1908.		1909.	
	Amount	Per cent.	Amount	Per cent.	Amount	Per cent.	Amount	Per cent.	Amount	Per cent.
	£		£		£		£		£	
Fish	98,606	28.89	118,529	32.30	135,420	35.13	146,616	29.05	143,694	31.13
Meats	27,149	47.89	29,445	48.46	23,271	49.65	26,366	48.05	24,901	46.85
Grain, prepared (malt, oatmeal, etc.) ...	62,463	79.13	69,407	80.96	61,412	76.81	69,558	76.83	37,867	68.84
Hops	13,332	21.24	13,460	22.11	7,604	15.30	7,934	19.24	6,430	16.95
Oilmen's stores (free)	60,259	88.66	50,812	87.41	48,694	82.27	55,075	77.48	72,125	80.88
Mustard	47,671	99.48	41,449	98.30	45,956	98.07	39,979	99.25	46,074	99.18
Tobacco, mfd. (cigars, cigarettes, etc.) ...	30,774	9.31	30,369	9.08	34,253	10.49	30,610	9.86	36,955	12.85
Oils and greases ...	98,869	34.38	124,844	33.94	132,850	30.47	177,949	38.31	177,523	40.20
Paints and colours ...	184,894	85.69	190,589	87.32	232,623	85.88	213,272	86.72	207,909	85.27
Marble and stone ...	12,129	34 08	11,380	30.55	14,071	26.91	13,595	29.49	16,222	29.86
Indiarubber manufcts.	28,569	27.74	39,637	24.58	41,132	22.10	38,607	23.01	44.726	26.21
Leather, manufacts. of	88,398	28.86	119,999	27.17	114,009	25.44	88,347	23.10	88,655	19.99
Harness—minor articles for	35,440	95.35	47.138	96.06	62,148	94.73	61,594	96.46	68,542	97.12
Furniture—minor articles for	17,327	78.93	24,934	79.05	34,801	74.10	36,242	70.80	50.931	76.10
Earth'ware, Bricks, etc	12,176	89.93	12,246	81.63	19,321	82.02	25,767	69.01	30,564	69.26
Glass and Glassware...	22,523	56.24	27,094	53.56	28,247	48.15	41,189	49.63	39,039	44.04
Paper...	315,429	40.45	320,162	42.45	255,238	36.63	280,859	32.99	305,451	39.86
Books, printed ...	405,510	91.08	416,523	91.97	424,045	92.02	421,458	89.13	465,719	90.34
Stationery	48,244	64.64	54,215	64.24	44,449	62.48	63,868	69 67	33,041	47.64
Instruments, scientific do., surgical & dental	9,407	64.59	11,583	73.89	13,803	66.35	21,498	72.69	17.709	67.09
Drugs and chemicals—	35,093	52.36	37,564	51.21	40,136	46.12	41,256	45.41	41,412	44.69
Insecticides, disinfectants, etc. ...	39,253	76.02	39,844	75.87	35,070	67.72	38,057	71.27	30,337	69.97
Medicines	150,899	47.06	135,867	62.43	146,689	62.63	133,427	58.49	123,428	58.13
Essential oils ...	12,577	48.44	20,543	53.93	19,092	42.87	14,675	28.91	8,067	24.93
Acids	6,416	12.66	9,830	17.80	11,361	23.08	23,605	31.35	20,518	44.04
Cyanide of potassium	175,879	86.19	193,102	85.23	174,571	84.94	208,773	91.04	196,548	83.63
Sodas (exclud. soda nitrate)	65,034	89.52	76,430	93.02	82,699	94 80	72,941	92.35	79,095	92.03
Fertilisers	95,079	28.01	114,909	26.84	100,331	25.79	83,745	18.96	74 014	20.52
Other drugs ...	167,317	38.18	174,062	35.21	200,009	31.73	168,358	27.68	135,879	23.13
Musical instruments (not pianos) & parts	16,858	20.16	20,890	21.81	29,952	26.74	18,007	21.17	19,958	23.63
Soap	42,265	54.32	39,923	50.24	47,692	46.12	35,574	46.13	34,994	46.44
Ships	263,442	99.04	358,000	97.75	655,760	96.34	672,000	95.98	749,950	99.05

6. **General Conclusions as to Preference.**—It will be seen from the foregoing that in order to determine in the first years of preference whether it has been efficient or not, it would be absolutely necessary to have correct records on the same basis for the years preceding the preferential scheme. There is every reason to believe that the records, in many instances, are not sufficiently accurate to allow of just comparisons being made. It is also obvious that a much more detailed analysis is essential than has ordinarily been thought necessary, and it will only be in the course of a number of years that anything like a definite opinion can be reached as to the efficiency of the preferential treatment, for as Professor W. J. Ashley in his preface to Mr. John Holt Schooling's "British Trade Book" says—"No comparison of isolated years, no comparison of short consecutive periods, can be relied upon to give properly comparable data."

Primarily, it will be necessary in some way to eliminate the normal growth in business which would have taken place under any régime whatever in an advancing country; and secondly, the significance of the statistics will depend upon a very rigid adherence to the same method of description in regard to items. If the practice of recording is as variable in the future as it has been in the past, no real deductions can be drawn, and this goes to show the importance of maintaining the same method of describing items, quite irrespective of their significance from the standpoint merely of revenue.

In order to determine the course of trade, it will be essential to maintain in its integrity for a sufficient number of years any classification of items once adopted, and no practicable means of analysis will enable one to penetrate the significance of the trade if that course is not followed, because the determining effect of a preference which, in its nature, is likely to be not too well marked compared with the other elements of growth, can easily be vitiated by the entering of other possibilities of change into the results.

7. **Preferential Tariff of New Zealand.**—"The Preferential and Reciprocal Trade Act 1903" of New Zealand introduced preferential rates of duty in favour of the produce of the British Dominions by imposing extra duties on certain imports which were the produce or manufacture of other countries. The list of preferential items was materially extended by the New Zealand "Tariff Act 1907," from the 31st March, 1908.

The following tables present an analysis of the imports into New Zealand during 1909, distinguishing those which would be affected by an application of the preferential provisions of the "Tariff Act 1907":—

NEW ZEALAND—IMPORTS 1909, PREFERENTIAL AND NON-PREFERENTIAL.

Particulars.	From United Kingdom and British Possessions.	From Foreign Countries.	Total.
	£	£	£
Imports affected by preferential tariff—			
Free	1,342,732	—	1,342,732
Dutiable	2,448,329	842,407	3,290,736
Total	3,791,061	842,407	4,633,468
Imports not affected by preferential tariff—			
Free	5,042,616	1,104,011	6,146,627
Dutiable	3,638,390	398,977	4,037,367
Total	8,681,006	1,502,988	10,183,994
Total merchandise	12,472,067	2,345,395	14,817,462
Bullion and Specie	857,205	52	857,257
Total	13,329,272	2,345,447	15,674,719

NOTE.—In this table the imports affected by the preferential provisions of the tariff are stated, as far as possible, according to the country of origin; those unaffected by preference according to country of shipment, the country of origin of these not being recorded. Without doubt imports from the United Kingdom and British Possessions include goods of foreign origin.

NEW ZEALAND—IMPORTS AFFECTED BY PREFERENTIAL TARIFF RATES, 1909.

FROM UNITED KINGDOM AND BRITISH POSSESSIONS.

Particulars.	Imports.	Duty which would be payable under—			
		Preferential Tariff.		General Tariff.	
	£	£	Rate %	£	Rate %
(A) Free	1,342,732	...	...	250,458	18.66
(B) Dutiable	2,448,329	496,279	20.27	748,008	30.55
Total	3,791,061	496,279	13.09	998,466	26.34

FROM FOREIGN COUNTRIES.

Particulars.	Imports.	Duty which would be payable under—			
		General Tariff.		Preferential Tariff.	
	£	£	Rate %	£	Rate %
Imports similar to group A above	89,027	13,367	15.02	...	...
" " " B "	753,380	228,305	30.31	156,247	20.74
Total	842,407	241,672	28.69	156,247	18.56

8. **Preferential Tariff of South Africa.**—Preference to goods of United Kingdom origin was first granted by the South African Customs Union Convention of 1903 from the 15th August of that year, and similar treatment was extended to Canada from the 1st July, 1904. The present preferential tariff of the South African Customs Union (Convention, 1906, and amendments, 1908) applies to produce of United Kingdom, Canada, New Zealand and the Commonwealth.

An analysis of the trade of South Africa is appended :—

SOUTH AFRICA.—IMPORTS, 1909—PREFERENTIAL AND NON-PREFERENTIAL.

Particulars.	From United Kingdom and Reciprocating Countries.	From other Countries.	Total.
	£	£	£
Imports affected by preferential tariff—			
Free...	4,269,119	...	4,269,119
Dutiable	12,554,449	6,383,924	18,938,373
Total	16,823,568	6,383,924	23,207,492
Imports not affected by preferential tariff—			
Free...	1,376,720	1,192,106	2,568,826
Dutiable	699,262	1,821,559	2,520,821
Total	2,075,982	3,013,665	5,089,647
Total merchandise	18,899,550	9,397,589	28,297,139
Bullion and specie	1,506,345	38,572	1,544,917
Total	20,405,895	9,436,161	29,842,056

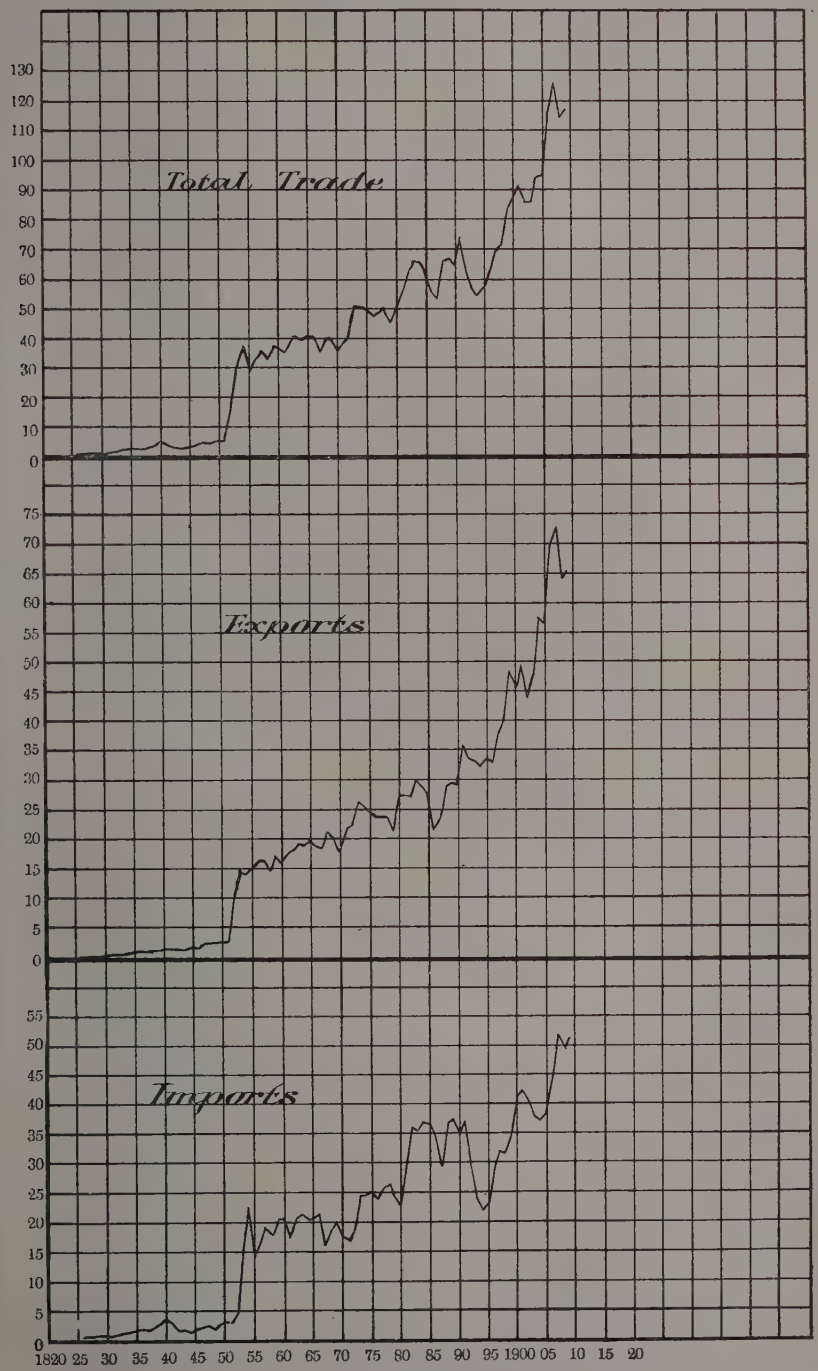
NOTE.—Owing to difficulty in applying the tariff rates to the statistical items, the above results must be taken as approximate only.

SOUTH AFRICA—IMPORTS AFFECTED BY PREFERENTIAL TARIFF RATES, 1909.

FROM UNITED KINGDOM AND RECIPROCATING BRITISH POSSESSIONS.

Particulars.	Imports.	Duty which would be payable under—			
		Preferential Tariff.		General Tariff.	
	£	£	Rate %	£	Rate %
(A) Free	4,269,119	...	...	128,074	3.00
(B) Dutiable	12,554,449	1,806,172	14.38	2,182,163	17.38
Total	16,823,568	1,806,172	10.73	2,310,237	13.73

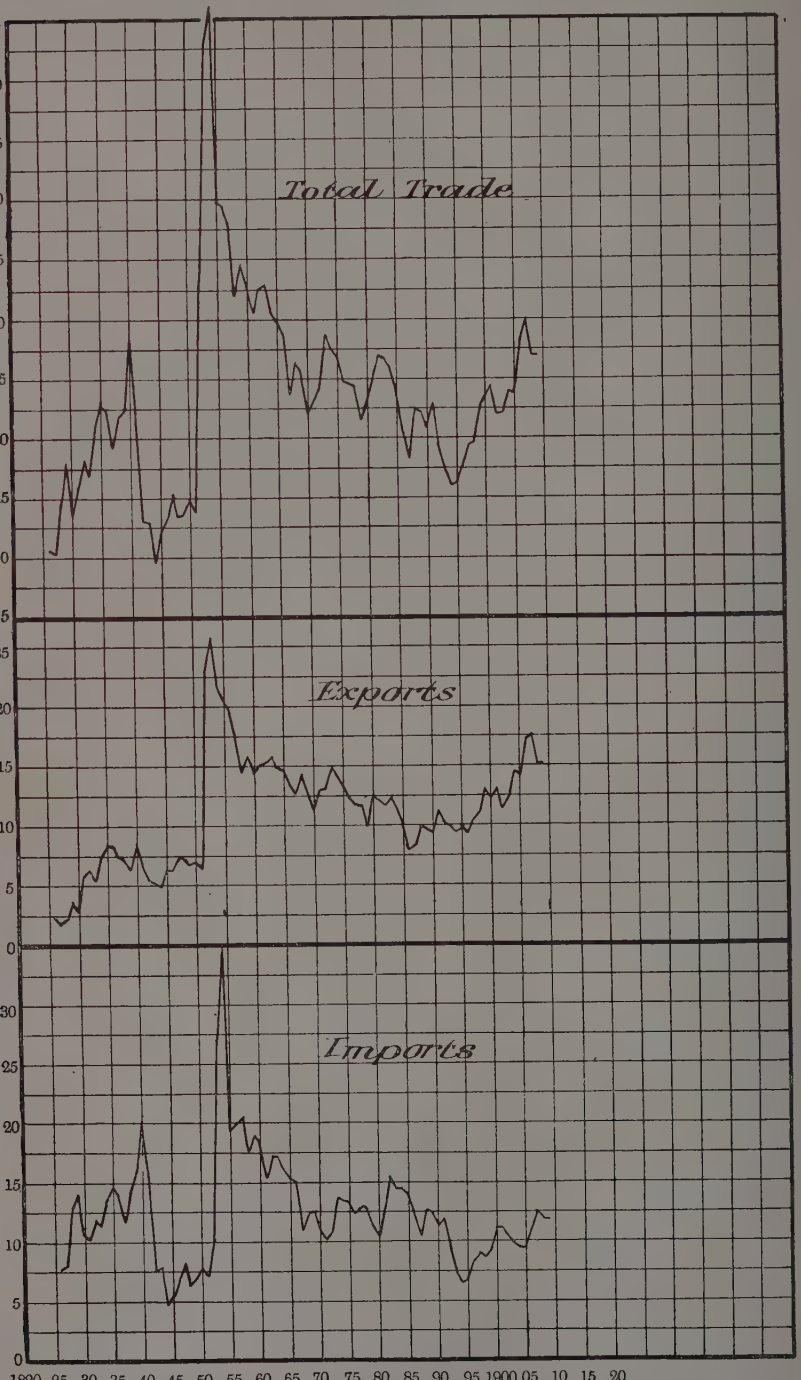
GRAPHS SHEWING VALUES OF TOTAL TRADE, EXPORTS AND IMPORTS OF COMMONWEALTH, 1826 TO 1909.



(See pages 612 and 613.)

EXPLANATION OF GRAPHS.—The base of each square represents an interval of five years, and the vertical height five million pounds sterling for Imports and Exports, and ten million pounds sterling for Total Trade.

GRAPHS SHEWING THE VALUES PER HEAD OF POPULATION OF TOTAL TRADE, EXPORTS AND IMPORTS OF COMMONWEALTH, 1826 to 1909.



(See pages 612 and 613).

EXPLANATION OF GRAPHS.—The base of each square represents an interval of five years, and the vertical height fifty shillings per head of the population. The basic lines of Imports and Exports are *nil* per head, and that of Total Trade is five pounds sterling per head.

IMPORTS INTO SOUTH AFRICA AFFECTED BY PREFERENTIAL TARIFF RATES, 1909.

FROM FOREIGN COUNTRIES.

Particulars.	Imports.	Duty which would be payable under—			
		General Tariff.		Preferential Tariff.	
	£	£	Rate %	£	Rate %
Imports similar to group (A) above	2,810,822	84,324	3.00	...	...
„ „ „ (B) „	3,573,102	655,990	18.36	543,915	15.22
Total	6,383,924	740,314	11.60	543,915	8.52

9. **Preferential Tariff of Canada.**—Preferential tariff treatment of goods of the United Kingdom and certain British Possessions was first given by Canada in 1897.

The published trade returns of Canada do not permit of an analysis similar to those given for the Commonwealth, New Zealand, and South Africa.

10. **Preferential Tariff Comparisons.**—The following table presents a comparative statement of the imports into the Commonwealth, New Zealand, and South Africa during 1909, the imports of each country having been analysed according to the application of its own tariff.

APPLICATION OF PREFERENTIAL TARIFFS.—COMPARATIVE STATEMENT, 1909.

Particulars.	C'wealth of Australia.	Dominion of New Zealand.	Customs Union of South Africa.
1. Total imports of merchandise ... £	50,115,521	14,817,462	28,297,139
2. „ „ from favoured countries £	25,809,347	12,472,067	18,899,550
3. Imports affected (favourably or adversely) by preferential rates ... ... £	24,677,764	4,633,468	23,207,492
4. Imports affected (favourably or adversely) by preferential rates, per cent. to total ...	49.24	31.27	82.02
5. Imports from favoured countries, p.c. to item 1	51.50	84.18*	66.80
6. Imports favoured by preferential rates £	16,482,032	3,791,061*	16,823,568
7. „ „ „ p.c. to item 1	32.89	25.58	59.45
8. „ „ „ „ 2	63.87	30.39	89.02
9. Amount of rebate ... ... £	834,268	502,187	504,065
10. Rate of rebate per cent. *ad val.*	5.06	13.25	3.00

* See note to table on page 657.

From the foregoing it will be observed that the preferential schemes, as at present in force in the different parts of the empire, are by no means uniform. The preferential tariff of New Zealand applies to a wider range of countries than that of any other part of the empire, inasmuch as the advantage of the lower tariff rates is extended to all parts of the British dominions, while those of Canada and South Africa apply to the United Kingdom and reciprocating British Possessions, and that of the Commonwealth to the United Kingdom only. Apart from the British preferential tariff, however, the Commonwealth, in consideration of its participation in the South African preference, gives a preference to certain products of that country. New Zealand and South Africa have also a special reciprocal trade agreement in addition to the main schemes of preference. Canada, under the Customs Tariff Act of 1907, makes provision for an intermediate tariff, which may be applied to the produce of *foreign* countries. Canada already has a reciprocal trade agreement with France and a similar agreement with the United States of America is at present awaiting ratification by the respective legislatures.

The margin between the rates of duty applied to British and foreign goods, respectively, is also higher in New Zealand than in the Commonwealth or South Africa, though in the latter countries the preferential tariff affects a greater proportion of the trade. On the basis of the imports into New Zealand during 1909 the average margin of preference was 13.25 per cent. of the value of the goods, while in the Commonwealth the similar margin was 5.06 per cent., and in South Africa 3.00 per cent. The average rate of duty charged in New Zealand on British goods, subject to preferential rates, was 13.09 per cent., while similar goods of foreign origin were called upon to pay 26.34 per cent. In the Commonwealth the collateral rates were 13.29 per cent. and 18.35 per cent. respectively, and in South Africa 10.73 per cent. and 13.73 per cent.

11. **South African Preference.**—Under the Commonwealth Customs Tariff (South African Preference) Act, No. 17 of 1906, preferential rates of duty were prescribed for certain goods "when those goods are imported from and are the manufacture of any of the British South African Colonies or Protectorates which are included within the South African Customs Union."

Preference to South African States was further confirmed by the Customs Tariff Amendment Act 1908 (No. 13 of 1908).

The imports during 1909 affected by the above-mentioned Act were as follows:—

IMPORTS INTO THE COMMONWEALTH DURING 1909 OF ARTICLES ENTITLED TO PREFERENCE UNDER THE SOUTH AFRICAN PREFERENCE ACT, AND THE VALUE OF THE PREFERENCE THEREON.

Particulars.	Rate of Rebate.	Imports.		Amount of Rebate.
		Quantity.	Value.	
			£	£ s.
Fish—				
Preserved in tins, etc. ... lbs.	¼d. per lb.	18,454	611	19 4
Grain—				
Maize ... ... cental	6d. per cntl.	215,844	66,438	5,396 2
Feathers—				
Undressed	5 per cent.	—	5,275	263 15
Dressed	10 per cent.	—	125	12 10
Tobacco manufactured—				
Cut ... ... lbs.	1/3 per lb.	2,088	236	130 0
N.E.I. ... ... lbs.	1/- per lb.	3,556	376	177 16
Tobacco unmanufactured ... lbs.	1/- per lb.	284	8	14 4
Wine—				
Still, in bottle ... ... gals.	5/- per gal.	4	4	1 0
Total	—	—	73,073	6,014 11

§ 12. Imports of Dutiable and Free Goods.

1. **Classified Statement of Imports.**—The following table shews, classified according to their nature, and distinguishing between dutiable and free goods, the estimated value of imports entered for home consumption during 1909, together with the amount and equivalent *ad valorem* rates of duty collected thereon. As no record is made of the value, entered for home consumption, of goods subject to specific duties, the value has been estimated on the basis of the value of corresponding imports. The free goods entered for home consumption have been taken to be the total imports of free goods less the value of similar goods re-exported.

VALUE OF GOODS (EXCLUDING BULLION AND SPECIE) ENTERED FOR CONSUMPTION IN THE COMMONWEALTH AND DUTY COLLECTED THEREON, 1909.

	Classification of Imports.	Value Entered for Consumption.			Duty Collected, less Refunds.	Equivalent *ad valorem* rate per cent. on—	
		Dutiable.	Free. (Net Imports).	Total.		Dutiable Imports.	All Imports.
		£	£	£	£	%	%
I.	Foodstuffs of animal origin (excluding living animals)	709,762	51,670	761,432	154,501	21.77	20.29
II.	Foodstuffs of vegetable origin and salt	2,030,768	147,394	2,178,162	835,858	41.16*	38.38*
III.	Beverages (non-alcoholic) & substances used in making	353,217	987,772	1,340,989	69,744	19.74	5.20
IV.	Spirits & alcoholic liquors, including industrial spirits and pharmaceutical preparations dutiable as spirits	1,523,126	432	1,523,558	2,273,056	149.21	149.20
V.	Tobacco and preparations thereof	585,229	...	585,229	970,696	165.85	165.85
VI.	Live animals	30,672	81,985	112,657	283	0.92	0.25
VII.	Animal substances (mainly unmanufactured) not foodstuffs	64,295	271,710	336,005	11,575	18.00	3.44
VIII.	Vegetable substances and fibres	136,528	815,777	952,305	39,433	28.89	4.14
IX.	Apparel, textiles, and manufactured fibres	8,672,688	6,154,086	14,826,774	1,854,860	21.39	12.51
X.	Oils, fats, and waxes ...	630,637	704,803	1,335,440	140,395	22.26	10.51
XI.	Paints and varnishes ...	413,091	17,464	430,555	74,926	18.14	17.40
XII.	Stones and minerals used industrially	130,285	32,186	162,471	28,089	21.56	17.29
XIII.	Specie (omitted)	...	...	...	...	...	...
XIV.	Metals (unmanufactured) and ores, excluding gold and silver bullion ...	4,889	219,896	224,785	723	14.79	0.32
XV.	Metals partly manufactured	...	708,318	708,318	...	...	...
XVI.	Metals manufactured, including machinery ...	6,428,081	4,034,462	10,462,543	976,226	15.19	9.33
XVII.	Leather and manufactures of leather and substitutes therefor, also indiarubber and indiarubber manufactures	763,537	256,403	1,019,940	159,723	20.92	15.66
XVIII.	Wood and wicker, raw and manufactured	1,923,289	155,614	2,078,903	324,854	16.89	15.63
XIX.	Earthenware, cements, china, glass, & stoneware	735,470	65,922	801,392	197,580	26.86	24.66
XX.	Paper and stationery ...	718,145	1,435,222	2,153,367	160,213	22.31	7.44
XXI.	Jewellery, timepieces, and fancy goods	920,027	279,375	1,199,402	233,305	25.36	19.45
XXII.	Optical, surgical, & scientific instruments... ...	88,003	288,859	376,862	16,662	18.93	4.42
XXIII.	Drugs, chemicals, and fertilisers	344,656	1,358,371	1,703,027	68,468	19.86	4.02
XXIV.	Miscellaneous	1,913,986	2,251,824	4,165,810	422,467	22.07	10.14
	Total merchandise ...	29,120,381	20,319,545	49,439,926	9,013,637	30.95	18.23
	Merchandise, excluding stimulants and narcotics	27,012,026	20,319,113	47,331,139	5,769,885	21.36	12.19

* The increase in the average *ad val.* rate of duty paid in this class as compared with 1908 (see previous issue) is mainly due to increased imports of sugar, which paid duty equivalent to an *ad val.* rate of 53 per cent., and to increased imports of dried fruits at an *ad val.* rate of over 100 per cent.

2. **Comparative Rates of Duty.**—Omitting bullion and specie, the proportion of total merchandise entered for "home consumption" free of duty in the undermentioned countries, and also the equivalent *ad valorem* rates of duty charged are as follows :—

PROPORTION OF FREE GOODS AND RATES OF IMPORT DUTY.

Particulars.	Australia.	Canada.	New Zealand.	U.S. of America
Year ended	31/12/09	31/3/10	31/12/09	30/6/09
Percentage of free merchandise	41.10	38.55	50.20	46.77
Equivalent *ad valorem* rates of duty on—	%	%	%	%
Spirits, wines, and malt liquors	149.20	136.12	160.20	71.60
Tobacco, and preparations thereof ...	165.85	20.57*	145.56	85.13
Other dutiable merchandise	21.36	24.24	22.02	40.38
Other merchandise dutiable and free ...	12.19	14.89	10.30	20.74
Total dutiable merchandise	30.95	26.71	36.21	43.15
Total merchandise dutiable and free ...	18.23	16.41	17.91	22.99
Customs duty per head	£ s. d. 2 1 4	£ s. d. 1 14 5	£ s. d. 2 14 7†	£ s. d. 0 13 11

* Unmanufactured tobacco is admitted to Canada free of duty. † Exclusive of Maoris.

Notwithstanding the increase in the proportion of free goods entered for consumption in the Commonwealth from 35.18 per cent. in 1906 (the last full year of operation of the 1902 tariff) to 41.10 per cent. in 1909, the average rate of duty on all merchandise has increased from 17.59 to 18.23 per cent. The average rate of duty on all dutiable imports has increased from 27.14 in 1906 to 30.95 per cent. in 1909. Excluding liquors and tobacco, the average rate of duty has increased from 17.04 in 1906 to 21.36 per cent. in 1909.

From the above table it will be seen that, excluding spirits, etc., and tobacco, the average rates of duty charged on dutiable goods in the Commonwealth and in New Zealand are substantially the same, though the larger proportion of free goods in the latter country somewhat reduces the average rate on dutiable and free goods as compared with the Commonwealth. On the same basis, *i.e.*, excluding spirits and tobacco, the average rates of duty in Canada are materially higher than in the Commonwealth or New Zealand, though the inclusion of these goods reverses the position. The lower average rate for Canada on total imports is due to the smaller relative proportion of liquors and tobacco imported into that country, in which connection it may be mentioned that, during 1910, 81 per cent. of the value of tobacco imported therein was unmanufactured tobacco admitted free of duty and subject only to excise on manufacture.

§ 13. Trade of the Individual States of the Commonwealth.

1. **Character of Data.**—The tables on pages 666 and 667 shew the trade of each State of the Commonwealth for the quinquennium immediately preceding Federation and for the years 1901 and 1905 to 1909.

Owing to the many differences existing between the statements of trade hitherto published by the various States and by the Commonwealth, and to the frequent alteration of the figures in succeeding editions of the several publications, it is not possible to furnish an exact statement of the trade of the several States. The figures here given, therefore, should be regarded as merely approximate.

2. **Record of Transhipments.**—In order to ensure a correct detailed record of the export trade of the Commonwealth, it has been the practice of the Department of Trade

and Customs, since the 1st September, 1903, to record goods transferred by sea from one State to another State of the Commonwealth, for transhipment abroad from the latter State, in the following manner:—

(i.) As an outward interstate transfer from the State from which the goods are originally moved.

(ii.) As an inward interstate transfer to the State in which the goods are transhipped.

(iii.) As an export (oversea) from the State in which the goods are transhipped abroad.

The record thus obtained in each of the several States does not indicate the proportion of the export trade of the Commonwealth actually contributed by each State, nor does it correctly indicate the amount of interstate trade.

In order to obtain a proper record of the trade of each State with oversea countries, and with other States of the Commonwealth, it is necessary to take into account the goods transhipped, not only in, but also from each State. The exact practice may be understood by giving an example. Five thousand tons of copper are, let us suppose, to be exported from Tasmania to Germany, the available oversea ship starting from a New South Wales port. The following records would then be made, viz.:—

(i.) An "outward interstate transfer" of 5000 tons of copper from Tasmania to New South Wales.

(ii.) An "inward interstate transfer" to New South Wales from Tasmania of 5000 tons of copper.

(iii.) An "oversea export" of 5000 tons of copper from New South Wales to Germany.

In this supposed case the trade is virtually, so far as Tasmanian trade is concerned, a direct export from Tasmania to Germany, and forms no essential element of the trade of New South Wales, either interstate or oversea.

3. **Adjustment of Data.**—In the tables hereinafter the necessary adjustments have been made, so far as sea-traffic is concerned. But goods transferred overland from one State to another, and subsequently exported to oversea countries, are at present necessarily included in the exports from the State in which the goods are shipped oversea. In such cases no adjustment is possible, because the necessary data are not available.

4. **Abolition of Interstate Records.**—With the cessation of the "book-keeping" method of distributing the revenue from customs and excise among the several States of the Commonwealth, all record, by the Commonwealth Government, of interstate trade has from the 13th September, 1910, been discontinued. It will therefore not be possible, in future, to publish returns of the internal trade of the Commonwealth.

5. **Trade of States.**—The following summary table shews the progress of the trade of the Commonwealth with oversea countries and of the trade between the several States. The periods selected for comparison are the quinquennium immediately preceding Federation (1896-1900), the quinquennium immediately following (1901-5), and the latest year (1909). The results shew that the total oversea trade of the Commonwealth has increased by 55.63 per cent., viz., from £74,856,000 per annum in the earlier period to £116,490,732 in 1909, while the interstate trade has risen from £27,484,000 to £42,711,233, equal to 55.40 per cent.

TRADE DEVELOPMENT, COMMONWEALTH, 1896 to 1909.

Development in period	1896-1900.	1901-5.	1909.	1896-1900.	1901-5.	1909.
Mean population	3,636,000	3,904,000	4,321,511	Result per Inhabitant.		
	£	£	£			
Oversea imports	33,763,000	39,258,000	51,171,896	£9 5 8	£10 1 1	£11 16 10
" exports	41,093,000	51,238,000	65,318,836	11 6 1	13 2 6	15 2 3
Interstate imports	27,484,000	28,744,000	42,711,233	7 11 2	7 7 3	9 17 8
" exports	26,381,000	28,703,000	42,711,233	7 5 1	7 7 0	9 17 8
Total imports	61,247,000	68,002,000	93,883,129	16 16 10	17 8 4	21 14 6
" exports	67,474,000	79,941,000	108,030,069	18 11 2	20 9 6	24 19 11

IMPORT TRADE OF EACH STATE AND COMMONWEALTH, 1896 to 1909.

State.	1896-1900.	1901.	1905.	1906.	1907.	1908.	1909.
FROM OVERSEA COUNTRIES.							
	£000.	£000.	£000.	£000.	£000.	£000.	£000.
New South Wales ...	13,866	17,560	14,485	17,604	20,860	19,829	20,888
Victoria	9,824	12,687	12,958	14,870	17,101	16,433	16,532
Queensland	3,488	3,516	3,164	3,748	4,618	4,516	4,592
S.A. (including N.T.)	3,328	3,965	3,232	3,983	4,815	4,972	5,096
Western Australia ...	2,707	3,895	3,769	3,780	3,588	3,212	3,322
Tasmania	550	811	738	759	827	837	742
Total	33,763	42,434	38,346	44,744	51,809	49,799	51,172
FROM OTHER COMMONWEALTH STATES (INTERSTATE).							
New South Wales ...	10,116	9,368	11,848	13,703	15,058	14,638	14,701
Victoria	6,782	6,240	8,202	8,926	9,765	9,634	10,710
Queensland	2,676	2,861	3,532	4,560	4,810	4,947	5,592
S.A. (including N.T.)...	3,889	3,453	5,204	5,714	7,292	6,259	6,237
Western Australia ...	3,011	2,559	2,712	3,040	2,935	2,966	3,083
Tasmania	1,060	1,154	1,914	2,271	2,421	2,534	2,388
Total	27,484	25,635	33,412	38,214	42,281	40,978	42,711
TOTAL (OVERSEA AND INTERSTATE).							
New South Wales ...	23,982	26,928	26,333	31,307	35,918	34,467	35,589
Victoria	16,606	18,927	21,160	23,796	26,866	26,067	27,242
Queensland	6,164	6,377	6,696	8,308	9,428	9,463	10,184
S.A. (including N.T.)...	7,167	7,418	8,436	9,697	12,107	11,231	11,333
Western Australia ...	5,718	6,454	6,481	6,820	6,523	6,178	6,405
Tasmania	1,610	1,965	2,652	3,030	3,248	3,371	3,130
Total	61,247	68,069	71,758	82,958	94,090	90,777	93,883

IMPORTS PER INHABITANT, 1896 to 1909.

	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
FROM OVERSEA COUNTRIES.							
New South Wales ...	10 12 3	12 17 7	9 16 6	11 13 2	13 9 1	12 10 10	13 0 2
Victoria	8 5 10	10 10 10	10 13 9	12 3 0	13 16 1	13 1 2	12 17 4
Queensland	7 8 9	7 0 4	6 0 4	7 0 9	8 11 5	8 4 5	8 2 6
S.A. (including N.T.)...	9 7 5	10 18 7	8 12 7	10 9 8	12 9 8	12 9 9	12 8 3
Western Australia ...	17 9 6	20 13 4	15 1 2	14 10 11	13 13 7	12 2 5	12 5 1
Tasmania	3 6 5	4 14 2	4 2 5	4 4 11	4 12 3	4 12 1	4 0 7
Total	9 5 8	11 3 9	9 10 11	10 19 1	12 9 4	11 15 3	11 16 10
FROM OTHER STATES (INTERSTATE).							
New South Wales ...	7 14 10	6 17 5	8 0 9	9 1 6	9 14 3	9 5 2	9 3 1
Victoria	5 14 6	5 3 8	6 15 4	7 5 11	7 17 7	7 13 1	8 6 9
Queensland	5 14 1	5 14 2	6 14 5	8 11 2	8 18 6	9 0 1	9 17 11
S.A. (including N.T.)...	10 16 3	9 10 4	13 17 10	15 0 10	18 18 2	15 14 6	15 3 9
Western Australia ...	19 8 8	13 11 7	10 16 8	11 14 0	11 3 9	11 3 10	11 7 8
Tasmania	6 8 1	6 13 10	10 13 7	12 14 0	13 10 0	13 18 11	12 19 4
Total	7 11 2	6 15 2	8 6 5	9 7 1	10 3 6	9 13 7	9 17 8
TOTAL (OVERSEA AND INTERSTATE).							
New South Wales ...	18 7 1	19 15 0	17 17 3	20 14 8	23 3 4	21 16 0	22 3 3
Victoria	14 0 4	15 14 6	17 9 1	19 8 11	21 13 8	20 14 3	21 4 1
Queensland	13 2 10	12 14 6	12 14 9	15 11 11	17 9 11	17 4 6	18 0 5
S.A. (including N.T.)...	20 3 8	20 8 11	22 10 5	25 10 6	31 7 10	28 4 3	27 12 0
Western Australia ...	36 18 2	34 4 11	25 17 10	26 4 11	24 17 4	23 6 3	23 12 9
Tasmania	9 14 6	11 8 0	14 16 0	16 18 11	18 2 3	18 11 0	16 19 11
Total	16 16 10	17 18 11	17 17 4	20 6 2	22 12 10	21 8 10	21 14 6

EXPORT TRADE OF EACH STATE OF THE COMMONWEALTH, 1896 to 1909.

State.	1896-1900.	1901.	1905.	1906.	1907.	1908.	1909.
TO OVERSEA COUNTRIES.							
	£000.	£000.	£000.	£000.	£000.	£000.	£000.
New South Wales ...	17,656	18,210	21,440	27,641	29,364	23,721	23,625
Victoria	11,303	13,075	12,992	16,838	15,924	14,155	17,030
Queensland	4,237	4,334	4,992	5,759	7,118	6,961	7,220
S.A. (including N.T.)	4,130	4,462	6,428	8,043	9,270	8,861	9,031
Western Australia ...	2,984	7,941	9,070	9,012	8,592	8,529	6,687
Tasmania	783	1,674	1,919	2,445	2,556	2,084	1,726
Total	41,093	49,696	56,841	69,738	72,824	64,311	65,319
TO OTHER COMMONWEALTH STATES (INTERSTATE).							
New South Wales ...	8,548	9,140	12,225	14,639	15,874	14,089	15,767
Victoria	5,257	5,571	8,588	10,626	11,478	11,898	11,958
Queensland	5,890	4,916	6,945	6,992	7,563	7,226	7,622
S.A. (including N.T.)	3,530	3,725	3,060	3,884	4,617	4,917	3,613
Western Australia ...	1,893	575	801	765	1,236	908	2,053
Tasmania	1,263	1,272	1,793	1,308	1,513	1,940	1,698
Total	26,381	25,199	33,412	38,214	42,281	40,978	42,711
TOTAL (OVERSEA AND INTERSTATE).							
New South Wales ...	26,204	27,350	33,665	42,280	45,238	37,810	39,392
Victoria	16,560	18,646	21,580	27,464	27,402	26,053	28,988
Queensland	10,127	9,250	11,937	12,751	14,681	14,187	14,842
S.A. (including N.T.)	7,660	8,187	9,488	11,927	13,887	13,778	12,644
Western Australia ...	4,877	8,516	9,871	9,777	9,828	9,437	8,740
Tasmania	2,046	2,946	3,712	3,753	4,069	4,024	3,424
Total	67,474	74,895	90,253	107,952	115,105	105,289	108,030

EXPORTS PER INHABITANT, 1896 to 1909.

	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
TO OVERSEA COUNTRIES.							
New South Wales ...	13 10 3	13 7 1	14 10 11	18 6 0	18 18 9	15 0 1	14 14 3
Victoria	9 10 10	10 17 3	10 14 4	13 15 2	12 17 1	11 5 0	13 5 2
Queensland	9 0 8	8 12 11	9 9 11	10 16 2	13 4 2	12 13 5	12 15 6
S.A. (including N.T.)	11 12 7	12 5 11	17 3 1	21 3 5	24 0 8	22 5 3	21 19 10
Western Australia ...	19 5 3	42 2 10	36 4 8	34 13 6	32 15 1	32 3 7	24 13 7
Tasmania	4 14 7	9 14 3	10 14 1	13 13 5	14 5 0	11 9 5	9 7 5
Total	11 6 1	13 2 1	14 3 0	17 1 4	17 10 6	15 3 10	15 2 3
TO OTHER STATES (INTERSTATE).							
New South Wales ...	6 10 10	6 14 1	8 5 10	9 13 10	10 4 9	8 18 3	9 16 4
Victoria	4 8 9	4 12 6	7 1 8	8 13 8	9 5 3	9 9 1	9 6 2
Queensland	12 11 1	9 16 2	13 4 2	13 2 7	14 0 8	13 3 1	13 9 9
S.A. (including N.T.)	9 18 10	10 5 4	8 3 4	10 4 6	11 19 5	12 7 0	8 15 11
Western Australia ...	12 4 4	3 1 0	3 3 11	2 18 10	4 14 3	3 8 6	7 11 6
Tasmania	7 12 7	7 7 7	10 0 1	7 6 3	8 8 8	10 13 6	9 4 5
Total	7 5 1	6 12 11	8 6 5	9 7 1	10 3 6	9 13 7	9 17 8
TOTAL (OVERSEA AND INTERSTATE).							
New South Wales ...	20 1 1	20 1 2	22 16 9	27 19 10	29 3 6	23 18 4	24 10 7
Victoria	13 19 7	15 9 9	17 16 0	22 8 10	22 2 4	20 14 1	22 11 4
Queensland	21 11 9	18 9 1	22 14 1	23 18 9	27 4 10	25 16 6	26 5 3
S.A. (including N.T.)	21 11 5	22 11 3	25 6 5	31 7 11	36 0 1	34 12 3	30 15 9
Western Australia ...	31 9 7	45 3 10	39 8 7	37 12 4	37 9 4	35 12 1	32 5 1
Tasmania	12 7 2	17 1 10	20 14 2	20 19 8	22 13 8	22 2 11	18 11 10
Total	18 11 2	19 15 0	22 9 5	26 8 5	27 14 0	24 17 5	24 19 11

SECTION XVI.

SHIPPING.

§ 1. General.

1. **Legislation.**—The shipping of the Commonwealth has hitherto been conducted partly under Imperial Acts, consolidated in the Merchants Shipping Act of 1894, and amendments of these, and partly under Acts of the several States of the Commonwealth. Since the scope of the local enactments differs materially in the different States, to define the proper limits of the jurisdiction of the Imperial and State laws cannot here be attempted.

By section 98, Part IV., of the Commonwealth Constitution Act, the power to make laws with respect to trade and commerce was extended to navigation and shipping, and in pursuance of this power a Bill for an Act relating to Navigation and Shipping was introduced into the Senate on the 17th March, 1904, but was not proceeded with.

On the 29th June, 1904, a Royal Commission was appointed to inquire into the Bill and report upon its provisions and any matter incidental thereto. In March and April, 1907, a conference between representatives of the United Kingdom, the Commonwealth of Australia, and New Zealand was held in London on the subject of merchant shipping legislation. The result of the deliberations was that an amended Bill was introduced into the Senate on the 12th September, 1907. Owing to pressure of Parliamentary business, however, the consideration of the Bill was held over. It was reintroduced into the Senate on the 17th September, 1908, but has not yet been passed into law. The Bill was drawn largely on the Merchants Shipping Acts and the Acts of New Zealand and New South Wales, and, as introduced, contains 417 sections divided into eleven parts, as follows:—I. Introductory. II. Masters and Seamen. III. Foreign Seamen. IV. Ships and Shipping. V. Passengers. VI. The Coasting Trade. VII. Wrecks and Salvage. VIII. Pilots and Pilotage. IX. Courts of Marine Inquiry. X. Legal Proceedings. XI. Miscellaneous.

2. **Record of Shipping before Federation.**—Prior to Federation it was customary for each State to regard the matter of shipping purely from the State standpoint, and vessels arriving from or departing to countries beyond Australia, via other Australian States, were recorded as if direct from or to the oversea country. Thus a mail steamer from the United Kingdom, which made Fremantle her first port of call in Australia, would be recorded not only there, but also again in Adelaide, Melbourne and Sydney, as an arrival from the United Kingdom. Consequently any aggregation, especially of the recent shipping records of the different States, would repeatedly include a large proportion of the shipping visiting Australia. In earlier years, when many vessels sailed from the

various State ports direct for their destination, the error of repeated inclusion was less serious, but as the commerce of Australia developed, more and more ports of call were included in the voyage of each vessel, and this made the mere aggregation of State records correspondingly misleading. It has, as a matter of fact, led to some erroneous publications of statistical results and deductions.

3. **Shipping since Federation.**—With the inauguration of the Commonwealth, the statistics of its shipping, especially of its oversea shipping, became of greater intrinsic importance. As an index of the position of Australia among the trading countries of the world, such statistics had a constitutional importance commensurate with Commonwealth interests, and correspondingly greater than those of individual States. And the nationality of the shipping trading with Australia became also a matter of greater moment.

4. **Difficulties of Comparisons of Total Shipping.**—From what was said in paragraph 2 above, it is obviously impossible now to obtain results for Australia not subject to the defect of repeated inclusions of the same vessels. Unfortunately the statistical records of the first three years of federal history are subject to the same defect, and do not admit of direct comparison with those now kept. A careful estimate of the extent and effect of repeated inclusion has been made and applied to the records of the earlier years, so as to extend the comparative results to those years. The error of such estimation will be negligible for comparative purposes.

5. **Present System of Record.**—The present system of record treats Australia as a unit, and counts, therefore, only one entry and one clearance for each visit to the Commonwealth. Repeated voyages of any vessel are of course included.

On arrival of every vessel at a port in the Commonwealth, whether from an oversea country or from another port within the Commonwealth, the master is required to deliver to the Customs officer a form giving all particulars, necessary for statistical purposes, in regard to the ship, passengers and crew. Similarly on departure from a port a form containing corresponding information is lodged. These forms, which provide a complete record of the movements of every vessel in Commonwealth waters, are at the end of each month forwarded by the Customs officer at each port to this Bureau, and furnish the material for the compilation of the Shipping and Migration Returns.

Under the system previously in force it was found that the estimates of population, in so far as they were based on seaward movement, were rather unsatisfactory, and it is believed that the method referred to above will give a result as nearly correct as is possible.

§ 2. Oversea Shipping.

1. **Total Oversea Shipping.**—In order to extend, as indicated, the comparison of the oversea shipping to the earliest years for which any records are available, an estimate of its probable amount has been made. This estimate is based on a comparison of the results obtained by merely aggregating State statistics with the defect of multiple records, and the results obtained under the present system, which avoids the multiple record. From the nature of the case, it is obvious that the ratio of repeated inclusion to the total traffic has been continually advancing, and this fact has been duly taken into account in deducing the results in the following table:—

TOTAL OVERSEA SHIPPING ENTERED AND CLEARED THE COMMONWEALTH, 1822 to 1909 (MULTIPLE RECORD EXCLUDED BY ESTIMATION PRIOR TO 1904).

Year.	Vessels.	Tons.	Year.	Vessels.	Tons.	Year.	Vessels.	Tons.
1822	73	30,683	1852	1,896	844,243	1882	3,652	3,010,944
1823	76	30,543	1853	3,364	1,490,422	1883	3,857	3,433,102
1824	71	29,029	1854	3,781	1,744,251	1884	4,315	4,064,947
1825	80	30,786	1855	3,239	1,449,657	1885	4,052	3,999,917
1826	65	23,587	1856	2,669	1,195,794	1886	3,793	3,853,246
1827	95	29,301	1857	2,842	1,530,202	1887	3,454	3,764,430
1828	124	38,367	1858	2,607	1,378,050	1888	3,933	4,464,895
1829	185	56,735	1859	2,759	1,403,210	1889	3,897	4,460,426
1830	195	56,185	1860	2,464	1,288,518	1890	3,363	4,150,027
1831	185	52,414	1861	2,466	1,149,476	1891	3,778	4,726,307
1832	206	59,628	1862	2,917	1,389,231	1892	3,432	4,239,500
1833	241	72,647	1863	3,378	1,564,369	1893	3,046	4,150,433
1834	249	77,068	1864	3,344	1,537,433	1894	3,397	4,487,546
1835	310	96,928	1865	3,005	1,317,934	1895	3,331	4,567,883
1836	310	93,974	1866	3,378	1,470,728	1896	3,309	4,631,266
1837	442	113,432	1867	2,927	1,277,679	1897	3,279	4,709,697
1838	471	132,038	1868	3,080	1,350,573	1898	3,222	4,681,398
1839	652	191,507	1869	3,107	1,472,837	1899	3,356	5,244,197
1840	915	277,335	1870	2,877	1,381,878	1900	3,719	5,894,173
1841	900	278,738	1871	2,748	1,312,642	1901	4,028	6,541,991
1842	862	232,827	1872	2,788	1,380,466	1902	3,608	6,234,460
1843	736	183,427	1873	3,159	1,609,067	1903	3,441	6,027,843
1844	629	155,654	1874	3,153	1,728,269	1904	3,700	6,682,011
1845	735	164,221	1875	3,437	1,914,462	1905	4,088	7,444,417
1846	888	211,193	1876	3,295	1,863,343	1906	4,155	7,966,658
1847	1,033	245,358	1877	3,157	1,930,434	1907	4,394	8,822,866
1848	1,182	305,840	1878	3,372	2,127,518	1908	4,051	8,581,151
1849	1,137	355,886	1879	3,344	2,151,338	1909	3,910	8,516,751
1850	1,300	425,206	1880	3,078	2,177,877			
1851	1,576	515,061	1881	3,284	2,549,364			

It will be borne in mind that while the above figures in themselves have no absolute significance, nevertheless, on the assumption that the element of duplication has been in fairly constant ratio, they furnish the best available indication of the growth of Australian oversea shipping.

2. **Comparison with other Countries.**—The place of Australia among various countries in regard to oversea shipping is indicated in the following table, both absolutely and in respect of tonnage per head of population:—

OVERSEA SHIPPING OF VARIOUS COUNTRIES.

Country.	Year.	Tonnage Entered and Cleared.		Country.	Year.	Tonnage Entered and Cleared.	
		Total.	Per Inhabitant.			Total.	Per Inhabitant.
Argentine Rep.	1907	22,994,473	4.1	Italy	1907	46,017,355	1.4
Belgium	1907	26,959,216	3.8	Japan	1907	40,439,536	0.8
Canada	1908	19,765,876	2.8	Natal	1908	5,018,084	4.2
Cape Colony	1907	5,813,305	2.3	New Zealand	1909	2,517,813	2.6
Commonwealth	**1909**	**8,516,751**	**1.9**	Norway	1907	8,824,784	3.8
Denmark	1907	15,870,364	6.0	Sweden	1907	19,664,893	3.7
France	1907	53,555,478	1.4	United K'dom	1909	133,267,682	3.0
Germany	1907	44,760,240	0.7	United States	1909	59,847,186*	0.7

* Exclusive of Northern Border and Lake Ports.

3. **Shipping Communication with various Countries.**—Particulars of the number and tonnage of vessels recorded between Australia and various countries, distinguishing

British from foreign countries, are given in the following tables, the table below shewing the tonnage of vessels which were recorded as having entered the Commonwealth from the particular countries mentioned; that on page 672 shews the tonnage of vessels which were recorded as having cleared the Commonwealth for the particular countries, while on page 673 is shewn the total number and tonnage of vessels recorded as entered and cleared from and to the countries named.

SHIPPING TONNAGE ENTERED AND CLEARED THE COMMONWEALTH FROM AND TO VARIOUS COUNTRIES, 1905 to 1909.

ENTERED.

Country.	1905.	1906.	1907.	1908.	1909.
United Kingdom ...	1,003,226	997,344	1,093,866	1,146,118	1,243,115
Canada ...	57,499	64,506	87,686	87,682	89,990
Cape Colony ...	218,257	165,691	128,498	55,779	80,088
Fiji ...	43,625	48,760	56,861	44,016	54,462
Hong Kong ...	94,268	128,480	104,959	66,114	41,521
India and Ceylon ...	75,973	89,199	69,705	95,709	89,377
Mauritius ...	24,889	23,461	8,005	8,137	35,366
Natal	111,971	89,360	68,541	32,898	127,531
New Zealand ...	637,094	647,862	702,373	794,488	737,899
Papua	7,220	12,046	16,438	30,369	42,803
South Sea Islands ...	25,305	48,765	34,049	57,694	57,341
Straits Settlements ...	81,791	118,049	72,407	133,601	104,284
Other British Countries ...	6,894	9,801	18,909	13,389	14,695
Total British Countries ...	2,388,012	2,443,324	2,462,297	2,565,994	2,718,472
Africa, Portuguese East ...	58,774	81,389	29,350	32,180	89,506
Belgium...	3,327	11,062	...	17,242	11,548
Chile	45,196	147,761	414,804	238,460	81,433
Dutch East Indies ...	31,420	63,258	20,364	27,831	78,203
France	82,054	76,217	101,439	81,713	113,964
Germany	198,363	275,676	287,850	270,135	276,021
Hawaiian Islands ...	18,569	20,787	53,584	21,138	38,011
Japan	156,697	180,314	189,747	185,633	136,340
Mexico	17,026	18,201	50,208	21,562	36,443
New Caledonia	73,359	64,296	64,401	57,630	63,250
Norway	37,322	44,894	29,000	29,417	36,094
Peru	19,123	25,573	75,850	47,247	50,291
Philippine Islands ...	91,699	114,897	113,904	174,042	75,977
South Sea Islands (foreign)...	19,427	15,656	19,661	30,899	30,990
Sweden	4,004	16,108	25,193	33,589	46,317
United States	391,731	332,516	411,636	354,625	290,520
Other Foreign Countries ...	88,983	74,216	122,778	106,342	187,814
Total Foreign Countries...	1,337,074	1,562,821	2,009,769	1,729,685	1,642,722
Total all Countries ...	3,725,086	4,006,145	4,472,066	4,295,679	4,361,194

SHIPPING TONNAGE ENTERED AND CLEARED, ETC.—(Continued).

CLEARED.

Country.	1905.	1906.	1907.	1908.	1909.
United Kingdom ...	967,499	1,024,906	1,077,830	963,548	1,239,669
Canada	31,490	36,483	43,423	51,248	53,541
Cape Colony	120,341	68,714	53,073	36,980	43,682
Fiji	53,613	54,167	67,750	66,890	49,890
Hong Kong	117,561	113,787	100,056	66,083	48,751
India and Ceylon ...	145,479	143,451	129,064	173,530	153,863
Mauritius	13,469	23,483	1,992	2,687	5,048
Natal	50,984	35,048	18,384	13,559	4,803
New Zealand	751,280	757,414	821,719	873,077	880,668
Papua	7,269	14,400	18,313	25,232	43,802
South Sea Islands ...	29,404	38,425	22,886	50,397	31,707
Straits Settlements ...	79,065	155,004	101,750	165,313	139,313
Other British Countries ...	2,167	...	4,452	...	...
Total British Countries	2,369,621	2,465,282	2,460,692	2,488,544	2,694,737
Africa, Portuguese East ...	24,935	14,511	25,103	8,535	19,697
Belgium	37,264	33,500	65,890	102,187	128,670
Chile	290,491	403,900	556,005	457,477	300,451
Dutch East Indies ...	23,177	34,608	24,099	59,412	61,753
France	113,034	66,756	85,710	81,226	63,490
Germany	186,537	234,325	236,617	252,881	279,526
Hawaiian Islands ...	79,499	48,097	42,245	46,009	26,253
Japan	40,004	54,822	56,243	110,486	90,732
Mexico	28,993	46,650	21,166	31,455	9,675
New Caledonia	76,191	80,606	59,805	67,668	72,234
Peru	81,270	87,641	78,664	59,530	36,568
Philippine Islands ...	116,274	155,214	151,202	178,631	124,816
South Sea Islands (foreign)	16,846	13,698	32,769	34,452	39,175
Sweden	...	1,411	...	2,530	4,084
United States	160,733	120,454	395,192	200,628	142,274
Other Foreign Countries	74,462	99,038	59,398	103,821	61,422
Total Foreign Countries	1,349,710	1,495,231	1,890,108	1,796,928	1,460,820
Total all Countries	3,719,331	3,960,513	4,350,800	4,285,472	4,155,557

The figures in the above table represent the tonnage of shipping recorded as having cleared the Commonwealth from the particular countries named. For the purpose of comment, however, countries have been grouped according to larger geographical divisions in section 4.

SHIPPING TONNAGE ENTERED AND CLEARED THE COMMONWEALTH FROM AND TO VARIOUS COUNTRIES, 1905 to 1909.

Country.	1905.	1906.	1907.	1908.	1909.
United Kingdom	1,970,725	2,022,250	2,171,696	2,109,666	2,482,784
Canada	88,969	100,989	131,109	138,930	143,531
Cape Colony	338,598	234,405	181,571	92,759	123,770
Fiji	97,238	102,927	124,611	110,906	104,352
Hong Kong	211,829	242,267	205,015	132,197	90,272
India and Ceylon	221,452	232,650	198,769	260,239	243,240
Mauritius	38,358	46,944	9,997	10,824	40,414
Natal	162,955	124,408	86,925	46,457	132,334
New Zealand	1,388,374	1,405,276	1,524,092	1,667,565	1,618,567
Papua	14,489	26,446	34,751	55,601	86,605
South Sea Islands	54,709	87,190	56,935	108,091	89,048
Straits Settlements	160,856	273,053	174,157	298,914	243,597
Other British Countries	9,061	9,801	23,361	13,389	14,695
Total British Countries	4,757,633	4,908,606	4,922,989	5,054,538	5,413,209
Africa, Portuguese East	83,709	95,900	54,453	40,715	109,203
Belgium	40,591	44,562	65,890	119,429	140,218
Chile	335,687	551,661	970,809	695,937	381,884
Dutch East Indies	54,597	97,866	44,463	87,243	139,956
France	195,088	142,973	187,149	162,939	177,454
Germany	384,900	510,001	524,467	523,016	555,547
Hawaiian Islands	98,068	68,884	95,829	67,147	64,264
Japan	196,701	235,136	245,990	296,119	227,072
Mexico	46,019	64,851	71,374	53,017	46,118
New Caledonia	149,550	144,902	124,206	125,298	135,484
Norway	37,322	44,894	29,000	29,417	38,506
Peru	100,393	113,214	154,514	106,777	86,859
Philippine Islands	207,973	270,111	265,106	352,673	200,793
South Sea Islands (foreign)	36,273	29,354	52,430	65,351	70,165
Sweden	4,004	17,519	25,193	36,119	50,401
United States	552,464	452,970	806,828	555,253	432,794
Other Foreign Countries	163,445	173,254	182,176	210,163	246,824
Total Foreign Countries	2,686,784	3,058,052	3,899,877	3,526,613	3,103,542
Total all Countries	7,444,417	7,966,658	8,822,866	8,581,151	8,516,751

In respect of these tables it may be pointed out that the statistics for any country do not fully disclose the extent of its shipping communication with particular countries. The reason of this is that vessels are recorded as arriving from, or departing to, a particular country, whereas, as a matter of fact, many regular lines of steamers call and transact business at the ports of several countries in the course of a single voyage. The lines of steamers trading between Australia and Japan, for example, often call at New Guinea, the Philippine Islands, China, etc., but, being intermediate ports, these countries are not referred to in the statistical records. Similarly in the case of the large mail steamers passing through the Suez Canal. A steamer may call at Colombo, Aden, Port Said, Genoa, Marseilles, London, Antwerp, and Bremerhaven, yet obviously can only be credited as cleared for one of these ports to the consequent exclusion of all the other ports from the records. Further reference is made in the following paragraphs to the more important of those countries with which the shipping of the Commonwealth is not fully represented in the foregoing tables.

4. **General Trend of Shipping.**—(i.) *General.* A grouping of countries into larger geographical divisions, as in the following tables, shews more readily the general

direction of Australian shipping, and to some extent, avoids the limitations of the records in relation to particular countries, by covering more closely the main trade routes.

It has already been shewn in the opening section of this chapter, that direct comparisons of the annual oversea shipping of the Commonwealth are possible only since the beginning of 1904.

A comparison of the total tonnage of shipping which entered and cleared the Commonwealth during 1909 with similar records for 1905 shews an increase of 1,072,334 tons, or 14.40 per cent., vessels with cargo having increased by 1,054,437 tons, or 17.23 per cent., and vessels in ballast by 17,897, or 1.35 per cent. This increase has been general in all directions except that of Africa and North America, the largest increase during the period being in the trade with the United Kingdom and European countries.

(ii.) *Shipping with the United Kingdom and European Countries.* The shipping between the Commonwealth and the United Kingdom and European countries during the past five years shews that steady increase which indicates the consistent development of a well-established trade. The shipping in this direction during 1909 amounted to 3,488,878 tons, or 40.9 per cent. of the total oversea shipping of the Commonwealth, and was recorded against the several countries as follows:—United Kingdom, 2,482,784 tons (71.2 per cent.); Germany, 555,547 tons (15.9 per cent.); France, 177,454 tons (5.1 per cent.); Belgium, 140,218 tons (4.0 per cent.); other European countries, 132,875 tons (3.8 per cent.).

The foregoing figures appear to shew that while the tonnage between the Commonwealth and the United Kingdom increased by 512,059 tons, equal to an increase of 25.98 per cent., the tonnage between the Commonwealth and European continental countries has increased by 314,902 tons, or by 45.44 per cent., or in other words that 61.92 per cent. of the increase was credited to the United Kingdom and 38.08 to the latter countries. As already explained, however, no real significance can be attached to these figures, for in many instances it must be regarded as almost accidental whether tonnage be recorded against the United Kingdom or against Belgium, Germany, or France.

The failure of the statistical records to present, in all cases, the full measure of the shipping communication between particular countries is illustrated by the case of Italy. Although the mail steamers which pass through the Suez Canal call at Naples and Genoa, and during 1909 embarked or landed at those ports 3920 passengers for or from Australia, and also carried a direct trade valued at £486,480 between Italy and the Commonwealth, the records for the year shew only seven vessels as passing between the two countries.

(iii.) *Shipping with New Zealand.* The tonnage of shipping between the Commonwealth and New Zealand shews a very satisfactory expansion from 1,388,374 tons in 1905 to 1,618,567 tons in 1909, an increase of 230,193 tons, or 16.6 per cent., during the four years, though the figures for the later year are somewhat lower than in 1908. The shipping with New Zealand represented 19.0 per cent. of the total shipping of the Commonwealth during 1909.

(iv.) *Shipping with Asiatic Countries and Islands in the Pacific.* The total tonnage between the Commonwealth and Eastern countries during 1909 amounted to 1,726,743 tons, or 20.3 per cent. of the whole, representing an increase of 169,858 tons, or 10.91 per cent., as compared with 1905. The principal countries responsible for this increase and the amount of the same due to each, were:—Japan, 30,371 tons, Straits Settlements, 82,741 tons; South Sea Islands (including Ocean Island), 68,231 tons; India and Ceylon, 21,788 tons; Dutch East Indies, 85,359 tons; Fiji, 7114 tons; and Papua, 72,116 tons. Owing to the limitation of the records, already alluded to, the figures given in the

tables do not represent the full volume of the shipping between the Commonwealth and the Philippines. In addition to the shipping recorded to the Philippine Islands the regular steam lines between the Commonwealth and Japan make Manila a regular port of call, and it is by these vessels that the general trade—apart from the coal trade—is chiefly carried. With the exception of one vessel of 3460 tons the whole of the shipping which was recorded as entered the Commonwealth during 1909 from the Philippines (75,977 tons) was in ballast, and of the 124,816 tons which was recorded as cleared for that country, 102,273 tons cleared from Newcastle with coal. The decline in the shipping tonnage between the Commonwealth and Asiatic countries and Pacific Islands in 1909 as compared with 1908, was largely due to the smaller coal trade, which was in some measure caused by the strike of the New South Wales miners.

(v.) *Shipping with Africa.* The shipping tonnage recorded between the Commonwealth and African countries during 1909 amounted to 454,083 tons, a decrease as compared with 1905 of 195,719 tons. Much of the trade between South Africa and Australia, however, is carried by steamers calling at ports in the former country on their voyages between the Commonwealth and the United Kingdom, and which are not shewn in relation to African ports in the shipping returns. Shipping tonnage with African countries—mainly confined to Cape Colony, Natal, and Portuguese East Africa—rose from 565,759 tons in 1904, to 649,802 tons in 1905, but fell to 527,574 tons in 1906, to 350,581 tons in 1907, and to 225,798 in 1908. So that the figures for 1909 indicate a very material increase. An inspection of the following tables, however, shews that these figures are of no significance as an index of the transport requirements between the two countries, inasmuch as of the total tonnage passing between the two countries 364,281 tons was from Africa to Australia, with only 89,802 the other way. Moreover, of the 364,281 tons which entered the Commonwealth from Africa, 336,605 tons, or 92.4 per cent., was represented by vessels in ballast seeking freights from Australian ports.

(vi.) *Shipping with North and Central America.* The shipping of the Commonwealth with these countries during 1909 amounted to 622,443 tons (7.3 per cent. of the whole) representing a decrease of 86,728 tons, or 12.2 per cent., as compared with 1905, and a decline of 130,683 tons, or 17.35 per cent., as compared with 1908. The large tonnage between the Commonwealth and North America during 1907 was due to unusually heavy exports of coal to the United States. The 622,443 tons of shipping with North and Central America during 1909 were recorded against the several countries as follows:—United States, 432,794 tons (69.5 per cent.); Canada, 143,531 tons (23.1 per cent.); and Mexico, 46,118 tons (7.4 per cent.).

(vii.) *Shipping with South America.* The shipping between the Commonwealth and South American countries during 1909—606,037 tons—was 27 per cent. greater than in 1905, though much less than in any year since 1905. The shipping in this direction during 1909 was mainly engaged in the carriage of coal and wheat to Chile and Peru, and its decline as compared with 1908 is due to the smaller export of coal. Of the total shipping tonnage between the Commonwealth and South America during 1909, 457,437 tons, or 75.5 per cent., is credited to the coal port of Newcastle, 144,558 tons having entered and 312,879 tons having cleared at that port, while of the same total 34,225 tons entered and 5263 tons cleared at the port of Sydney. Of the South American countries, Chile is responsible for 381,884 tons (63.0 per cent.); Peru, 86,859 tons (14.3 per cent.); Argentine Republic, 62,913 tons (10.3 per cent.); Brazil, 34,853 tons (5.8 per cent.), Uruguay, 25,195 tons (4.2 per cent.); and Ecuador, 14,333 tons (2.4 per cent.).

An important fact, from its bearing on freight rates and its consequent possible effect on the coal trade of New South Wales with South America, is the absence of back freights from that country. Of the 249,737 tons of shipping which entered the Common-

wealth from South America during 1909 only three vessels, totalling 6189 tons, carried cargo.

GENERAL DIRECTION OF THE SHIPPING OF THE COMMONWEALTH, 1905 to 1909.

TONNAGE ENTERED.

Countries.	—	1905.	1906.	1907.	1908.	1909.
United Kingdom & European Countries	Cargo...	1,263,010	1,350,946	1,418,211	1,443,731	1,604,822
	Ballast	84,364	76,946	124,681	142,154	151,792
New Zealand	Cargo...	505,808	520,404	547,065	606,755	610,148
	Ballast	131,196	118,368	155,308	187,933	127,761
Asiatic Countries & Islds. in the Pacific	Cargo...	380,154	470,032	485,703	554,310	620,599
	Ballast	355,994	466,893	381,509	413,089	215,111
Africa	Cargo...	45,395	33,348	22,890	13,506	27,676
	Ballast	380,424	341,761	320,008	133,898	336,605
North and Central America ...	Cargo...	355,821	372,306	351 223	418,775	350,074
	Ballast	121,402	42,917	200,407	45,094	66,870
South America	Cargo...	1,714	2,154	3,754	9,365	6,189
	Ballast	80,774	191,080	560,467	327,160	243,548
	Cargo...	2,561,982	2,767,280	2,828,786	3,046,051	3,219,498
	Ballast	1,163,154	1,238,865	1,643,280	1,249,628	1,141,696
Total	...	3,725,086	4,006,145	4,472,066	4,295,679	4,361,194

TONNAGE CLEARED.

United Kingdom & European Countries	Cargo...	1,315,543	1,382,948	1,470,952	1,414,973	1,732,264
	Ballast	-	74	6,188	5,195	—
New Zealand	Cargo...	664,411	712,153	742,257	814,667	807,791
	Ballast	86,869	45,261	79,462	58,410	72,877
Asiatic Countries & Islds. in the Pacific	Cargo...	777,016	906,095	794,069	999,148	844,078
	Ballast	33,721	32,938	23,946	66,934	49,955
Africa	Cargo...	220,560	152,465	106,843	75,550	80,650
	Ballast	3,483	-	-	2,835	352
North and Central America ...	Cargo...	203,523	192,590	392,118	213,355	144,491
	Ballast	23,425	19,807	75,600	76,902	60,999
South America	Cargo...	376,654	508,972	630,544	545,225	388,304
	Ballast	9,126	7,180	10,821	13,269	17,936
	Cargo...	3,556,707	3,855,193	4,154,783	4,061,927	3,953,578
	Ballast	162,624	105,320	196,017	223,545	201,979
Total	...	3,719,331	3,960,513	4,350,800	4,285,472	4,155,557

TONNAGE ENTERED AND CLEARED.

Countries.	1905.	1906.	1907.	1908.	1909.	1909 Compared with 1905.
United Kingdom & European Countries	2,662,917	2,810,914	3,029,082	3,005,953	3,488,878	+ 825,961
New Zealand	1,388,374	1,405,276	1,524,092	1,667,565	1,618,567	+ 230,193
Asiatic Countries and Islands in the Pacific	1,556,885	1,884,988	1,685,227	2,033,490	1,726,743	+ 169,858
Africa	649,802	527,574	350,581	225,798	454,083	— 195,719
North and Central America	709,171	627,620	1,019,348	753,126	622,443	— 86,728
South America	477,268	710,286	1,214,586	895,219	606,037	+ 128,769
Cargo	6,118,630	6,622,473	6,983,569	7,107,978	7,173,076	+ 1,054,437
Ballast	1,325,778	1,344,185	1,839,297	1,473,173	1,343,675	+ 17,897
Total	7,444,417	7,966,658	8,822,866	8,581,151	8,516,751	+ 1,072,334

5. **Nationality of Oversea Shipping.**—As will be seen from the following table, the greater part of the shipping visiting the Commonwealth is of British nationality. During 1909 British shipping represented 72.67 per cent. of the total tonnage which entered and cleared the Commonwealth.

NATIONALITY OF ALL VESSELS WHICH ENTERED AND CLEARED THE COMMONWEALTH FROM AND TO OVERSEA COUNTRIES, 1905 to 1909.

Nationality.	Tonnage.				
	1905.	1906.	1907.	1908.	1909.
BRITISH—					
Australian	569,210	642,422	624,658	657,833	720,183
United Kingdom... ...	4,201,185	4,341,502	4,944,495	4,715,393	4,470,679
New Zealand	752,325	800,402	817,389	926,669	988,006
Other British	22,642	18,626	13,842	18,726	10,628
Cargo	4,670,049	4,929,499	5,250,818	5,437,831	5,426,643
Ballast	875,313	873,453	1,149,566	880,790	762,853
Total British	5,545,362	5,802,952	6,400,384	6,318,621	6,189,496
Per cent. to total ...	74.49	72.84	72.54	73.63	72.67
FOREIGN—					
Austrian	—	9,982	6,121	4,341	—
Danish	20,310	11,758	15,656	11,869	8,848
Dutch	19,989	20,392	29,118	56,162	132,954
French	517,154	475,839	561,151	521,235	559,383
German	633,197	836,793	851,237	810,289	845,758
Italian	106,017	81,195	130,569	88,364	86,521
Japanese	—	61,054	78,157	82,209	79,120
Norwegian	263,103	366,978	479,932	463,705	440,727
Russian	41,033	55,138	50,721	39,999	46,041
Swedish	29,963	31,085	35,141	35,117	49,587
United States	268,289	208,228	173,588	106,888	56,148
Other Foreign	—	5,264	11,091	42,352	22,168
Cargo	1,448,590	1,692,974	1,732,751	1,670,147	1,746,433
Ballast	450,465	470,732	689,731	592,383	580,822
Total Foreign	1,899,055	2,163,706	2,422,482	2,262,530	2,327,255
Per cent. to total ...	25.51	27.16	27.46	26.37	27.33
Cargo	6,118,639	6,622,473	6,983,569	7,107,978	7,173,076
Per cent. to total...	82.19	83.12	79.15	82.83	84.22
Ballast	1,325,778	1,344,185	1,839,297	1,473,173	1,343,675
Per cent. to total...	17.81	16.88	20.85	17.17	15.78
Grand Total	7,444,417	7,966,658	8,822,866	8,581,151	8,516,751

The tonnage of Australian-owned vessels engaged in the oversea trade represents 8.46 per cent. of the total, and the tonnage of New Zealand vessels 11.60 per cent. Both are engaged mainly in the trade with New Zealand and eastern countries. An examination of the figures in the above table shews that, of the increase in tonnage in 1909 as compared with 1905, viz., 1,072,334 tons, 644,134 tons (*i.e.*, 60.06 per cent.) were British and 428,200 tons (*i.e.*, 39.94 per cent.) were foreign. But to sustain the proportion of British tonnage as in 1905 it was necessary that 74.49 per cent. of the increase should be British.

If, however, the tonnage of ships carrying cargo only is considered as indicating more closely the proportion of the actual carrying trade done, the proportion of British vessels in 1909 is practically equal to the average proportion of the previous five years. The relative proportion of British and foreign tonnage which entered and cleared the Commonwealth with cargo during the past five years was as follows:—

PROPORTION OF TONNAGE OF BRITISH AND FOREIGN NATIONALITY ENTERED AND CLEARED THE COMMONWEALTH WITH CARGO, 1905 to 1909.

Nationality.	1905.	1906.	1907.	1908.	1909.
British	76.30	74.42	75.19	76.50	75.65
Foreign	23.70	25.58	24.81	23.50	24.35
Total	100.00	100.00	100.00	100.00	100.00

That the proportion of foreign tonnage should increase is the natural corollary of the extension of the trade of the Commonwealth with foreign countries. This is particularly patent in regard to Germany and France. Both of these countries desire to increase their mercantile marine, and it is therefore natural that the increased direct trade between themselves and Australia should be carried by their own vessels rather than by the vessels of a third country. Recently, too, the Royal Dutch Packet Company has established a line of steamers between Java and other islands of the East Indies and Australia.

The more important competitors for the Australian shipping trade among the foreign nations are Germany, France, and Norway, and it is therefore of interest to consider the general direction of their activity. It is well to bear in mind, when comparing the figures in the table on the next page, that the French shipping from and to France and to New Caledonia is practically identical with the steamers of the Messageries Maritimes, which maintain a regular service between France and New Caledonia via Australian ports, and that the German shipping from and to Germany consists mainly of the vessels of two lines, the Norddeutscher Lloyd, and the German-Australian Steamship Company, which have had regular and frequent services to Australian ports for the past twenty-six years.

SHIPPING OF PRINCIPAL FOREIGN NATIONS BETWEEN AUSTRALIA AND OTHER COUNTRIES DURING 1909.

Countries.	Nationality.					
	French.		German.		Norwegian.	
	Entered.	Cleared.	Entered.	Cleared.	Entered.	Cleared.
EUROPEAN COUNTRIES—	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
United Kingdom	48,730	62,451	4,403	26,848	9,119	48,647
Belgium	4,177	2,235	3,451	5,710	3,920	4,727
France	104,377	40,760	...	...	...	3,342
Germany	6,199	...	252,187	251,595	...	...
Norway	...	...	8,417	...	4,261	...
Sweden	...	...	16,679	...	8,755	2,299
Other European Countries ...	7,246	...	1,636	...	3,398	...
NEW ZEALAND	...	...	4,974	2,403	24,849	21,003
ASIATIC COUNTRIES AND ISLANDS IN THE PACIFIC—						
Japan	3,852	1,916	12,612	16,193	2,327	...
New Caledonia	54,289	61,656	2,632	2,632	...	...
Philippine Islands	...	...	2,872	10,626	2,357	2,781
South Sea Islands	900	10,756	1,078	1,078	29,157	23,481
Straits Settlements ...	...	...	2,435	21,827	1,480	1,479
Other Asiatic Countries ...	8,410	2,099	19,398	12,563	4,064	9,125
AFRICAN COUNTRIES—						
Africa, Portuguese East ...	...	...	870	...	7,494	7,481
Cape Colony	...	...	6,758	...	22,073	16,437
Natal	...	...	...	...	12,676	2,486
Other African Countries ...	2,256	...	...	...	6,261	1,207
NTH. AMERICAN COUNTRIES—						
United States	30,028	84,564	36,713	5,244	10,842	2,313
Other Nth. Amer. Countries...	...	1,726	19,852	...	9,374	844
STH. AMERICAN COUNTRIES—						
Chile	5,174	15,582	24,326	46,137	5,196	37,394
Peru	...	...	6,420	5,798	18,324	10,261
Other Sth. Amer. Countries ...	...	...	8,521	870	48,295	11,198
With Cargo	128,297	197,242	341,583	409,524	89,290	195,437
In Ballast	147,341	86,503	94,651	...	144,932	11,068
Total	275,638	283,745	436,234	409,524	234,222	206,505

A further analysis is appended, distinguishing between steam and sailing vessels of British and foreign nationality, which entered and cleared the Commonwealth during the years 1905-9. Steam tonnage during 1909 was 1,639,586 tons greater than in 1905, 1,215,265 tons (*i.e.*, 74.12 per cent.) of the increase being British, and 424,321 tons (*i.e.*, 25.88 per cent.) being foreign. The tonnage of sailing vessels shews a decrease during the same period of 567,252 tons, for while British tonnage fell by 571,131 tons, that of foreign nations shews a small increase of 3879 tons.

The following table shews also the proportion of steam and sailing vessels engaged in the Australian trade. As might be expected, the proportion of sailing vessels is shewn to be a decreasing one, falling during the period under review from 29 per cent. to 19 per cent. of the total tonnage, and it is in this branch of shipping that the foreign element is stronger than the British.

STEAM AND SAILING VESSELS ENTERED AND CLEARED, 1905 to 1909.

Description and Nationality of Vessels.	1905.		1906.		1907.		1908.		1909.	
	Tonnage.	Percentages.	Tonnage.	Percentages.	Tonnage.	Percentages.	Tonnage.	Percentages.	Tonnage.	Percentages.
Steam—										
British ...	4,368,183	83	4,743,416	80	5,290,986	82	5,723,288	82	5,583,448	81
Foreign ...	901,202	17	1,186,767	20	1,162,413	18	1,259,714	18	1,325,523	19
Total steam	5,269,385	100 (71)	5,930,183	100 (74)	6,453,399	100 (73)	6,983,002	100 (81)	6,908,971	100 (81)
Sailing—										
British ...	1,177,179	54	1,059,536	52	1,109,398	47	595,333	37	606,048	38
Foreign ...	997,853	46	976,939	48	1,260,069	53	1,002,816	63	1,001,732	62
Total sailing	2,175,032	100 (29)	2,036,475	100 (26)	2,369,467	100 (27)	1,598,149	100 (19)	1,607,780	100 (19)
Steam and Sailing—										
British ...	5,545,362	74	5,802,952	73	6,400,384	73	6,318,621	74	6,189,496	73
Foreign ...	1,899,055	26	2,163,706	27	2,422,482	27	2,262,530	26	2,327,255	27
Total ...	7,444,417	100	7,966,658	100	8,822,866	100	8,581,151	100	8,516,751	100

6. **Tonnage in Ballast.**—The following table shews the tonnage of oversea vessels which entered and cleared the Commonwealth in ballast during the years 1905-9. Of the total British tonnage which entered during 1909, 21.06 per cent. was in ballast, and of foreign tonnage 39.80 per cent. was in similar condition. Of the total tonnage which entered the Commonwealth during 1909, 26.18 per cent. was in ballast, while of the tonnage cleared 4.86 per cent. only was without cargo.

TONNAGE ENTERED AND CLEARED IN BALLAST, 1905 to 1909.

Year.	Entered.			Cleared.		
	British.	Foreign.	Total.	British.	Foreign.	Total.
1905	772,423	390,731	1,163,154	102,890	59,734	162,624
1906	808,190	430,675	1,238,865	65,263	40,057	105,320
1907	1,043,383	599,897	1,643,280	106,183	89,834	196,017
1908	794,745	454,883	1,249,628	86,045	137,500	223,545
1909	667,478	474,218	1,141,696	95,375	106,604	201,979

PROPORTION OF TOTAL BRITISH AND FOREIGN TONNAGE WHICH ENTERED AND CLEARED IN BALLAST, 1905 to 1909.

Year.	Entered.			Cleared.		
	British.	Foreign.	Total.	British.	Foreign.	Total.
	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.
1905	27.84	41.08	31.22	3.71	6.30	4.37
1906	27.28	39.88	30.92	2.30	3.70	2.66
1907	32.23	48.60	36.75	3.36	7.56	4.51
1908	25.05	40.51	29.09	2.74	12.07	5.22
1909	21.06	39.80	26.18	3.16	9.39	4.86

Vessels in search of freights arrive in Australia from all parts of the world. The tonnage which entered each State of the Commonwealth, in ballast, during 1909 was as follows:—

TONNAGE OF OVERSEA VESSELS IN BALLAST WHICH ENTERED EACH STATE OF THE COMMONWEALTH DURING THE YEAR 1909.

State	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
Tonnage	617,161	49,727	25,560	214,325	145,776	89,147	1,141,696
Percentage of total ...	54.05	4.36	2.24	18.77	12.77	7.81	100

The large exports of coal from New South Wales afford special inducements to vessels in search of freights. During 1909, 617,161 tons, or 54.1 per cent. of all ballast tonnage arriving in Australia, entered in New South Wales, 471,446 tons having entered at the coal port of Newcastle. The proportion of ballast tonnage entering Newcastle during 1909 was much lower than usual in consequence of the coal miners' strike. The demand for carriage of the large shipments of wheat and wool, however, was sufficient to prevent any material diminution of the large aggregate ballast tonnage to the Commonwealth. The relatively large tonnage in ballast recorded in Tasmania is mainly due to French vessels—sailing under the bounty system—calling at Hobart for orders.

§ 3. Shipping of Ports.

1. **Shipping of Ports.**—Appended is an abstract of the total shipping tonnage—oversea and coastwise—which entered the more important ports of Australia during the year 1909, together with similar information in regard to some of the ports of New Zealand and of the United Kingdom for the same year :—

SHIPPING OF PORTS, AUSTRALIA AND VARIOUS COUNTRIES, 1909.

Port.	Tonnage Entered.	Port.	Tonnage Entered.
AUSTRALIA—		ENGLAND AND WALES—	
Sydney	6,088,313	London	19,293,133
Melbourne	4,835,021	Liverpool (inc. Birkenhead)	14,038,692
Port Adelaide	2,591,699*	Tyne ports	11,567,762
Brisbane...	2,068,598	Cardiff	11,465,794
Newcastle	1,987,994	Southampton	6,384,352
Fremantle	1,695,805	Hull	5,448,462
Townsville	1,092,765	Plymouth	4,456,384
Albany	933,029	Newport	3,131,140
Hobart	788,065	Middlesbrough	3,040,941
Rockhampton	697,152	Sunderland	3,022,356
Mackay	686,589	Swansea	2,820,599
Cairns	652,278	Blyth	2,338,816
Geelong	480,061	Manchester	2,234,805
Port Pirie	435,678	Dover	1,846,718
Bowen	430,274	Grimsby	1,634,561
Thursday Island	319,374	SCOTLAND—	
Wallaroo	275,941	Glasgow	5,532,488
NEW ZEALAND—		Leith	2,282,818
Wellington	2,775,902	IRELAND—	
Lyttelton	2,130,978	Cork (inc. Queenstown) ...	4,284,763
Auckland	1,520,040	Belfast	3,015,138
Dunedin	983,773	Dublin	2,627,710

* Exclusive of coastal shipping—particulars of which are not available.

From the figures above it may be seen that the shipping business of the port of Sydney is only exceeded by that of five ports in the United Kingdom, viz., London, Liverpool, the Tyne, Cardiff, and Southampton.

§ 4. Vessels Built and Registered.

1. **Vessels Registered.**—The number and net tonnage of steam and sailing vessels on the registers at the various ports of the Commonwealth at the end of each of the years 1901 to 1909 are as follows:—

VESSELS ON THE REGISTER, 1901 to 1909.*

Year.	Steam.		Sailing.		Total.	
	Number.	Net Tonnage.	Number.	Net Tonnage.	Number.	Net Tonnage.
1901	943	203,541	1,433	141,722	2,376	345,263
1902	965	208,043	1,483	141,125	2,448	349,168
1903	1,004	219,985	1,578	136,888	2,582	356,873
1904	1,011	223,558	1,700	129,801	2,711	353,359
1905	1,052	222,551	1,690	129,291	2,742	351,842
1906	1,082	238,742	1,644	128,288	2,726	367,030
1907	1,108	249,600	1,555	126,402	2,663	376,002
1908	1,148	255,249	1,571	129,392	2,719	384,641
1909	1,196	274,551	1,535	129,540	2,731	404,091

* Prior to 1904 vessels registered in the Northern Territory of South Australia are not included.

2. **Vessels Built.**—The following table shews the number and net tonnage of steam and sailing vessels built and registered in Australia during the years 1901 to 1909:—

VESSELS BUILT AND REGISTERED, 1901 to 1909.

Year.	Steam.		Sailing.		Total.	
	Number.	Net Tonnage.	Number.	Net Tonnage.	Number.	Net Tonnage.
1901	16	1,533	35	960	51	2,493
1902	21	1,195	58	1,574	79	2,769
1903	35	1,536	51	1,160	86	2,696
1904	16	730	54	1,079	70	1,809
1905	29	1,375	12	417	41	1,792
1906	28	874	17	1,109	45	1,983
1907	26	1,108	19	593	45	1,701
1908	20	1,014	20	424	40	1,438
1909	29	1,164	23	523	52	1,687

§ 5. Interstate Shipping.

1. **Total Vessels and Tonnage.**—In the following table are shewn the number and tonnage of vessels recorded as having entered each State of the Commonwealth from any other State therein, and similarly the number and tonnage clearing from each State to other Commonwealth States. The table gives results for the quinquennial intervals since 1886. The shipping on the Murray River, between the States of New South Wales, Victoria and South Australia, is not included.

INTERSTATE SHIPPING, 1886 to 1909.—NUMBER OF VESSELS.

ENTERED.

State.	1886.	1891.	1896.	1901.	1906.	1909.
New South Wales	1,603	1,692	1,470	1,611	1,575	1,585
Victoria	1,433	1,525	1,280	1,502	1,561	1,551
Queensland	615	376	439	430	478	488
South Australia and Northern Territory	550	611	823	650	752	724
Western Australia	187	149	520	446	335	332
Tasmania	576	680	567	713	840	853
Total	4,964	5,033	5,099	5,352	5,541	5,533

CLEARED.

New South Wales	1,402	1,415	1,275	1,473	1,417	1,447
Victoria	1,615	1,733	1,380	1,569	1,610	1,645
Queensland	712	389	455	395	431	470
South Australia and N. Territory	620	716	918	756	802	811
Western Australia	156	158	496	456	363	350
Tasmania	615	679	573	694	809	835
Total	5,120	5,090	5,097	5,343	5,432	5,558

TOTAL.

New South Wales	3,005	3,107	2,745	3,084	2,992	3,032
Victoria	3,048	3,258	2,660	3,071	3,171	3,196
Queensland	1,327	765	894	825	909	958
South Australia and N. Territory	1,170	1,327	1,741	1,406	1,554	1,535
Western Australia	343	307	1,016	902	698	682
Tasmania	1,191	1,359	1,140	1,407	1,649	1,688
Total	10,084	10,123	10,196	10,695	10,973	11,091

TONNAGE.—ENTERED.

State.	1886.	1891.	1896.	1901.	1906.	1909.
New South Wales	1,181,495	1,617,559	1,589,753	2,031,089	2,456,269	2,879,661
Victoria ...	1,072,381	1,392,818	1,486,624	1,956,900	2,473,771	2,672,849
Queensland ...	355,930	267,753	343,026	545,469	692,354	778,180
S. Aust. and N.Ter.	437,502	658,600	1,051,893	1,124,499	1,582,802	1,678,399
Western Australia	127,098	237,708	683,918	973,474	968,664	1,068,197
Tasmania ...	221,061	371,205	281,029	485,023	721,240	811,851
Total ...	3,395,467	4,545,643	5,436,243	7,116,454	8,895,100	9,889,137

TONNAGE—(Continued).

State.	1886.	1891.	1896.	1901.	1906.	1909.
CLEARED.						
New South Wales	1,014,900	1,314,339	1,341,635	1,856,501	2,177,496	2,600,361
Victoria ...	1,257,967	1,692,189	1,599,065	2,038,424	2,617,966	2,920,526
Queensland ...	411,275	302,723	359,046	440,659	578,561	729,260
S. Aust. and N.Ter.	485,368	829,616	1,203,830	1,365,668	1,772,356	1,959,102
Western Australia	116,101	269,256	687,632	977,846	1,051,629	1,101,516
Tasmania ...	251,620	352,406	250,557	433,735	636,944	710,018
Total ...	3,537,231	4,760,529	5,441,765	7,112,833	8,834,952	10,020,783
TOTAL.						
New South Wales	2,196,395	2,931,898	2,931,388	3,887,590	4,633,765	5,480,022
Victoria ...	2,330,348	3,085,007	3,085,689	3,995,324	5,091,737	5,593,375
Queensland ...	767,205	570,476	702,072	986,128	1,270,915	1,507,440
S. Aust. and N.Ter.	922,870	1,488,216	2,255,723	2,490,167	3,355,158	3,637,501
Western Australia	243,199	506,964	1,371,550	1,951,320	2,020,293	2,169,713
Tasmania ...	472,681	723,611	531,586	918,758	1,358,184	1,521,869
Total ...	6,932,698	9,306,172	10,878,008	14,229,287	17,730,052	19,909,920

The figures presented in the above table include oversea vessels—largely mail boats—passing from one State to another. This renders the results somewhat unsatisfactory.

In the earlier part of this section attention was drawn to the custom in vogue prior to Federation of recording vessels from or to "oversea countries via other Commonwealth States" as *direct* from or to the oversea country. At each port in Australia these vessels were, on the inward voyage (to Australia), entered as from the oversea country, and cleared to the next Australian port as "interstate"; on the return journey—the outward voyage—they were entered as "interstate," and cleared as for the oversea country. In order to preserve the continuity of the records of the shipping communication of the several States with oversea countries this method has been followed in continuation of the pre-existing practice, excepting that vessels arriving or departing via other Commonwealth States are now so recorded instead of as "direct."

From the above it will be seen that while certain movements of the vessels referred to are included in the interstate shipping, other movements of the same vessels, between the same ports, are not so included.

To ascertain the aggregate movement of shipping between the States during the year 1909, including the total interstate movements of oversea vessels, the figures in the following table must be added to those of the preceding one :—

SHIPPING ENTERED AND CLEARED FROM AND TO OVERSEA COUNTRIES VIA OTHER COMMONWEALTH STATES, 1909.

State.	Entered.		Cleared.		Total.	
	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.
New South Wales ...	455	1,553,373	445	1,507,499	900	3,061,372
Victoria	386	1,301,797	375	1,282,088	761	2,583,885
Queensland ...	167	572,689	173	612,848	340	1,185,537
South Australia ...	189	721,335	135	516,682	324	1,238,017
Western Australia ...	8	16,776	9	16,667	17	33,443
Tasmania	...	...	21	102,604	21	102,604
Total ... (1909	1,205	4,166,470	1,158	4,038,388	2,363	8,204,858
Total ... (1906	1,045	3,349,036	1,107	3,442,747	2,152	6,791,783

2. **Total Interstate Movement of Shipping.**—The table hereunder shews the total interstate shipping, including all interstate movements of vessels from and to oversea countries, via other Commonwealth States, for the year 1909:—

TOTAL INTERSTATE MOVEMENT OF SHIPPING, 1909.

State.	Entered.		Cleared.		Total.	
	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.
New South Wales ...	2,040	4,433,534	1,892	4,107,860	3,932	8,541,394
Victoria	1,937	3,974,646	2,020	4,202,614	3,957	8,177,260
Queensland	655	1,350,869	643	1,342,108	1,298	2,692,977
South Australia ...	913	2,399,734	946	2,475,784	1,859	4,875,518
Western Australia ...	340	1,084,973	359	1,118,183	699	2,203,156
Tasmania	853	811,851	856	812,622	1,709	1,624,473
Total ... ... (1909	6,738	14,055,607	6,716	14,059,171	13,454	28,114,778
Total ... ... (1906	6,586	12,244,136	6,539	12,277,699	13,125	24,521,835

The necessary data are not available to enable a similar adjustment to be made for earlier years.

3. **Vessels Engaged Solely in Interstate Trade.**—The elimination of the element of oversea vessels, included in the interstate shipping returns, cannot be accurately effected; nevertheless a close approximation is furnished if it be assumed that vessels *entered* in the several States as from "oversea countries via other Commonwealth States" have really been *cleared* from other States as "interstate," and further, that the vessels *cleared* to "oversea countries via other Commonwealth States" have likewise been *entered* elsewhere as "interstate." Applying this suggestion, and also eliminating all interstate movements of oversea vessels, the number and tonnage of vessels engaged solely in the interstate trade during the years 1906 to 1909 will be found to be as follows:—

NUMBER AND TONNAGE OF VESSELS ENGAGED SOLELY IN INTERSTATE TRADE 1906-1909.

Year	Entered.		Cleared.		Total.	
	No.	Tons.	No.	Tons.	No.	Tons.
1906	4,434	5,452,353	4,387	5,485,916	8,821	10,938,269
1907	4,614	5,582,571	4,566	5,580,963	9,180	11,163,534
1908	4,706	5,961,617	4,654	5,916,339	9,360	11,877,956
1909	4,375	5,850,749	4,353	5,854,313	8,728	11,705,062

This treatment cannot be extended to the individual States, as the records do not disclose the particular relationship of the States concerned.

4. **Interstate and Coastal Services.**—The foundation of the coastal steamship services in Australia dates back to the year 1851, when a regular trade was established between Melbourne and Geelong by the small screw steamer "Express." Early in the fifties a company was formed in Tasmania with a capital of £40,000 for the purpose of purchasing steamboats, and employing them in the carriage of passengers and goods between Hobart and Melbourne. This service was commenced in 1852, and was thus the first regular interstate service in Australia. About this time the great influx of population and the increase in commerce, caused chiefly by the gold discoveries, emphasised the desirability of establishing more regular and quicker means of communication between the principal ports of Australia, and in 1862 the regular interstate service between New South Wales and Victoria was inaugurated by the s.s. *You Yangs*, which was put into commission in regular service between Melbourne, Sydney, and Newcastle. In 1875 a company was formed in Adelaide for the purpose of supplying suitable steamers for the requirements of the trade between Adelaide and Melbourne. The first two steamers of the company were named the *South Australian* and the *Victorian*, and were small vessels of only 400 tons burthen. From the start success attended these enterprises, and the services thus initiated were rapidly extended and their operations broadened. Numerous other companies were formed to cope with the increasing trade between ports in the Commonwealth, and the companies engaged from time to time added to their fleets of steamers by the acquisition of more modern and rapid vessels, until at the end of the year 1909 the total net tonnage owned by the eleven companies from whom returns have been received amounted to 156,870 tons. A summary of the various mail services carried on during the year 1909 is given in Section XVIII. of this work.

The subjoined table gives particulars, so far as they are available, of all steamships engaged in regular interstate or coastal services at the end of each of the years 1901 and 1904 to 1909:—

PARTICULARS OF STEAMSHIPS ENGAGED IN REGULAR INTERSTATE AND COASTAL SERVICES IN THE COMMONWEALTH, 1901 to 1909.

Particulars.	1901.	1904.	1905.	1906.	1907.	1908.	1909.
Number of companies making returns	11	11	11	11	11	11	11
Number of steamships	113	113	117	122	131	135	138
Tonnage { Gross	184,574	195,057	198,338	207,320	227,605	242,766	262,655
Tonnage { Net	114,080	118,612	120,470	125,560	137,573	145,917	156,870
Horse-power { Nominal	18,237	19,031	19,180	20,258	21,735	22,699	25,350
Horse-power { Indicated	122,519	138,422	141,054	149,345	163,166	175,270	221,105
Number of passengers for which licensed to carry { 1st class ...	4,617	5,536	5,764	6,077	6,399	6,689	6,766
Number of passengers for which licensed to carry { 2nd class and steerage ...	4,490	5,645	5,745	5,906	6,026	6,115	6,398
Complement of Crew { Masters and officers ...	403	404	410	431	458	478	494
Complement of Crew { Engineers	332	343	343	360	388	411	430
Complement of Crew { Crew	2,875	3,153	3,181	3,351	3,625	3,721	3,900

5. **Lighthouses and Lights on the Coast of the Commonwealth.**—See Year Book No. 2.

6. **Ports of the Commonwealth.**—See Year Book No. 3.

§ 6. Shipwrecks.

The following statement shews the number and tonnage of vessels wrecked, or otherwise lost,* on the coast of the Commonwealth, or under the jurisdiction of the several States, during the years 1901 to 1909 :—

NUMBER AND TONNAGE OF VESSELS WRECKED, 1901 to 1909.

Year.	Class of Vessel.	Number and Tonnage of Vessels.										Passengers and Crew.	Lives Lost.
		Under 50 tons.		50 to 500 tons.		500 to 2000 tons.		Over 2000 tons.		Total.			
		No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.	No.	No.
1901	Steam ...	7	189	5	949	2	2,811	...	...	14	3,949	250	40
	Sailing ...	11	217	6	785	5	5,800	...	...	22	6,802	172	10
	Total ...	18	406	11	1,734	7	8,611	...	...	36	10,751	422	50
1902	Steam ...	2	83	1	340	4	3,173	...	...	7	3,596	157	25
	Sailing ...	12	221	4	369	3	3,142	1	2,103	20	5,835	161	4
	Total ...	14	304	5	709	7	6,315	1	2,103	27	9,431	318	29
1903	Steam ...	2	61	5	1,753	2	2,377	...	...	9	4,191	200	11
	Sailing ...	18	306	4	551	2	1,924	...	...	24	2,781	217	10
	Total ...	20	367	9	2,304	4	4,301	....	...	33	6,972	417	21
1904	Steam ...	1	35	2	204	1	886	1	3,702	5	4,827	363	31
	Sailing ...	14	238	6	765	5	4,646	1	2,413	26	8,062	227	59
	Total ...	15	273	8	969	6	5,532	2	6,115	31	12,889	590	90
1905	Steam ...	3	49	2	594	...	...	1	3,325	6	3,968	417	...
	Sailing ...	10	160	5	775	3	3,678	1	2,176	19	6,789	160	57
	Total ...	13	209	7	1,369	3	3,678	2	5,501	25	10,757	577	57
1906	Steam ...	4	89	2	154	...	...	1	2,415	7	2,658	60	12
	Sailing ...	5	77	3	276	1	1,725	2	5,022	11	7,100	105	1
	Total ...	9	166	5	430	1	1,725	3	7,437	18	9,758	165	13
1907	Steam ...	3	71	4	916	3	3,572	...	...	10	4,559	204	16
	Sailing ...	8	162	6	421	5	6,895	...	...	19	7,478	170	29
	Total ...	11	233	10	1,337	8	10,467	...	...	29	12,037	374	45
1908	Steam ...	6	137	7	816	2	2,930	2	5,585	17	9,468	299	37
	Sailing ...	56	775	3	276	3	4,074	1	2,062	63	7,187	348	219
	Total ...	62	912	10	1,092	5	7,004	3	7,647	80†	16,655	647	256
1909	Steam ...	1	48	3	359	1	1,382	1	2,286	6	4,075	131	40
	Sailing ...	6	163	3	362	2	2,681	...	...	11	3,106	88	6
	Total ...	7	211	6	721	3	4,063	1	2,286	17	7,181	219	46

* In some cases the vessels included in the above return were subsequently recovered. † The large number of wrecks, during 1908, was due to cyclones on the north west coast of Western Australia destroying a large number of the pearling vessels.

SECTION XVII.

ROADS AND RAILWAYS.

§ 1. Roads and Bridges.

1. **Introduction.**—In Year Books No. 1 (pages 541 to 551) and No. 2 (pages 675 to 685), a brief historical account was given of the construction and development of roads in Australia. It is not proposed to repeat that account in the present issue of the Year Book.

2. **Expenditure on Roads and Bridges.**—Figures shewing the total expenditure on roads and bridges in the States are not available. The subjoined statement, however, gives the amounts of total loan expenditures by the State Governments up to the 30th June, 1910:—

ROADS AND BRIDGES.—TOTAL LOAN EXPENDITURE IN EACH STATE AND IN THE COMMONWEALTH UP TO THE 30th JUNE, 1910.

State, etc. ...	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
Expenditure	£1,797,115	£176,293	£923,656	£1,464,736	£199,055	£2,700,000 *	£7,260,855 *

* Approximate.

The following table shews the annual expenditure from loans on roads and bridges by the central Governments in each State and in the Commonwealth during each financial year since 1901:—

ROADS AND BRIDGES.—LOAN EXPENDITURE BY STATE GOVERNMENTS, 1901-2 to 1909-10.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
1901-2 ...	150,777	47,104	...	185	740	77,536[1]	276,342
1902-3 ...	73,471	44,770	1,333	200	...	55,687[1]	175,461
1903-4 ...	47,812	17,267	...	78	...	39,037[1]	104,194
1904-5 ...	59,019	14,945	...	...	...	55,303[2]	129,267
1905-6 ...	28,666	1,919	...	...	712	57,536	88,833
1906-7 ...	11,162	444	...	...	15,613	75,399	102,618
1907-8 ...	1,690	23	...	...	7,956	94,443	104,112
1908-9 ...	...	237	...	...	8,120	136,674	145,031
1909-10 ...	...	50	...	...	24,117	... [3]	24,167[4]

1. For the calendar years 1901, 1902, and 1903 respectively. 2. For the eighteen months ended 30th June, 1905. 3. Not available separately. 4. Exclusive of Tasmania.

The two tables given above shew only a small proportion of the actual expenditure upon roads and bridges in the different States, for the reason that (*a*) there have been large expenditures from revenue, both by the central Governments and by local authorities, and (*b*) the State Governments have in many cases voted grants and subsidies on the amount of rates collected, and have issued loans to local authorities either for the express purpose of the construction of roads and bridges or for the general purpose of public works construction. Returns of expenditure, where available, are given below for each State. Although no revenue is now derived directly from roads and bridges, they are indirectly of great value to the community, forming, next to railways and public lands, the most considerable item of national property.

3. **New South Wales.**—The control of all roads, bridges, and ferries in New South Wales is now regulated by the Local Government Act 1906, which came into force on the 1st January, 1907 (see Section XXVI. hereinafter). Under the provisions of this Act the eastern and central divisions of the State are divided into shires and municipalities for the general purposes of local government, for the endowment of which a sum of not less than £150,000 is payable annually out of the consolidated revenue on the basis of a percentage subsidy on the proceeds of the general rates received by the District Councils. The control of all roads, bridges, and ferries (except those proclaimed "National" and those in the unincorporated areas of the Western Division) has been transferred from the Roads Department to the respective shire and municipal councils, who are now responsible for their construction and maintenance. Up to December, 1910, 38 miles of roads, 265 bridges, 54 wharves, 99 jetties, and 12 ferries had been proclaimed as "National" works. Power is given to construct new roads, to widen or close existing roads, to make by-laws for the regulation of traffic, etc.; in the case of the acquisition of land for the purpose of constructing new roads or of widening existing roads, the provisions of the Roads Act 1902 are incorporated. The Minister for Works is empowered to pay subsidies to the local authorities to maintain the roads. The roads leading to and within areas of lands which are made available for closer settlement will be constructed by the Government prior to transfer to the shires, as also will roads required mainly for tourists in districts not likely to produce revenue in rates to the local authorities.

(i.) *Principal Main Roads.* The four principal main roads in New South Wales run in the same direction as, and are roughly contiguous to, the four State-owned main railway lines. (*a*) *The Southern Road*, 385 miles in length, runs from Sydney to Albury, and before the days of railway construction, formed part of the highway over which the interstate traffic between Melbourne and Sydney used to flow. (*b*) *The South Coast Road*, 250 miles long, runs from Campbelltown along the top of the coast range and across the Illawarra district as far as Bega, from which place it extends as a minor road to the southern limits of the State. (*c*) *The Western Road*, 513 miles long, runs through Bathurst, Orange and many other important townships as far as Bourke, on the Darling River. (*d*) *The Northern Road*, 405 miles in length, runs from Morpeth, near Newcastle, as far as Maryland, on the Queensland border.

(ii.) *Length and Classification of Roads and Bridges.* The length of roads in the State (exclusive of 38 miles proclaimed as "National works") in 1909 was approximately 82,796 miles, of which 9563 miles were controlled by municipalities, 67,043 by the shires, and 6190 miles were in the unincorporated areas of the western division. The following table gives particulars for the year 1909-10 of roads classified according to whether metalled, etc., formed only, cleared only, or natural surface:—

NEW SOUTH WALES.—APPROXIMATE LENGTH OF ROADS, 1909-10.

Classification.	Metalled, Ballasted, Gravelled etc.	Formed only.	Cleared only.	Natural surface.	Total.
	Miles.	Miles.	Miles.	Miles.	Miles.
Metropolitan...	1,104	321	241	207	1,873
Country Municipalities*	2,388	1,405	1,800	2,097	7,690
Shires	10,766	7,685	18,665	29,927	67,043
Western Division	80	137	2,669	3,304	6,190
Total*	14,338	9,548	23,375	35,535	82,796

* Exclusive of one municipality, which failed to furnish returns.

(iii.) *Bridges, Culverts, and Ferries.* The more important bridges have been proclaimed under the provisions of the Local Government Act as "National works," (see above) and these, together with the bridges, etc., in the Western Division, remain under the control of, and are maintained by, the Public Works Department. Particulars of bridges, culverts, and ferries in the State in 1909 are given in the following table :—

NEW SOUTH WALES.—BRIDGES, CULVERTS, AND FERRIES, 1909.

Particulars.	Bridges, 20 ft. span and over.		Culverts.		Ferries.
	No.	Length.	No.	Length.	No.
		ft.		ft.	
National works	265	105,322	...	...	12
Metropolitan...	126	4,787	626	50,944	16
Country municipalities* ...	616	34,602	3,212	71,620	
Shires*	3,125	186,924	29,232	258,007	89
Western Division (unincorporated) ...	124	21,815	107	1,435	5
Total*	4,256	353,450	33,177	382,006	122

* Exclusive of one municipality and two shires, which failed to furnish returns.

(iv.) *Expenditure on Roads and Bridges.* Since the year 1857 the total expenditure by the Roads Department and Roads Trust on roads and bridges is £24,483,883. In this expenditure is included the cost of administering the Department, services for other Departments, and payments on account of punt approaches and similar works incidental to the road traffic of the country. The amount expended from 1857 to the 30th June, 1900, for the next quinquennium and for each succeeding financial year up to 1909, is given below. Until recent years, the expenditure on these works increased at a much faster rate than the population.

NEW SOUTH WALES.—EXPENDITURE BY ROAD DEPARTMENTS AND ROAD TRUSTS, 1857 to 1909.

Period.	Expenditure by Roads Department.	Expenditure by Trustees.	Total.
	£	£	£
1857 to 30th June, 1900 ...	18,714,078	1,258,027	19,972,105
1901 to 1905	3,340,299	28,944	3,369,243
1906*	457,421	1,171	458,592
1907*	407,268	549	407,817
1908*	158,005	...	158,005
1909*	118,121	...	118,121
Total	23,195,192	1,288,691	24,483,883

* Year ended 30th June.

The amount expended during each year since 1906 has decreased, as the expenditure by the Department is now limited to the construction of roads in closer settlement areas and to the construction and maintenance of national bridges and ferries, and of works in the unincorporated areas of the Western Division.

4. **Victoria.**—Under the Local Government Act 1903, the control, construction, and maintenance of all roads, streets, and bridges are in the hands of Municipal Councils, who are empowered to open new roads, and to close, divert, or increase the width of any existing street or road, provided that no new road less than one chain in width may be opened without the consent of the Minister. The councils are also authorised to make and repair streets, lanes, or passages on private property, or forming means of back access to private property, and may compel the owners of such property to pay the cost of so doing. Footways in front of houses or grounds may be kerbed, flagged, paved, or asphalted, and the owners of such houses or grounds must bear half the cost of so doing. The revenue of the councils is derived from rates which may be either general or extra. The councils are empowered to raise loans for the purpose of making or opening new streets and roads, and for diverting, altering, or increasing the width of streets and roads, provided that the amount of such loan must not exceed ten times the average income of the council during the three years immediately preceding.

(i.) *General and Local Government Expenditure.* The gross amount expended directly by the State Government of Victoria on roads and bridges was £7,756,345 up to the end of June, 1900; figures for succeeding years are given in the table below. The annual expenditure from ordinary revenue by municipalities is not returned separately, but is included in Public Works Construction and Maintenance (see Section xxvi. *Local Government*). The subjoined table shews the cost from general revenue of municipalities of private streets, roads, etc., and also shews the amounts of municipal loan expenditure from 1901 to 1909 inclusive:—

VICTORIA.—EXPENDITURE ON ROADS AND BRIDGES, 1901 to 1909.

Financial Year.[1]	Annual Expenditure by State Government.	Municipal Loan Expenditure.		Formation of Private Roads, Streets, Lanes, etc.[2]	
		Cities, Towns, and Boroughs.	Shires.	Cities, Towns, and Boroughs.	Shires.
	£	£	£	£	£
1901	72,890	16,844	12,928	18,829	4,521
1902	75,855	13,047	15,656	17,655	4,542
1903	69,200	13,540	12,696	15,279	4,028
1904	42,144	12,929	1,444	15,432	4,072
1905	30,393	21,515	2,560	21,593	2,083
1906	56,145	5,673	8,480	18,237	1,390
1907	43,119	21,137	7,495	25,244	3,052
1908	72,246	21,859	5,206	30,907	1,811
1909	99,572	21,389	9,058	34,285	3,603

1. The financial years of Melbourne and Geelong end on the 31st December and the 31st August respectively; those of all other municipalities on the 30th September.
2. Including the cost of flagging, asphalting footpaths, etc., but exclusive of loan expenditure.

5. **Queensland.**—In Queensland the construction and maintenance of public roads are controlled under a system of local self-government, for the purposes of which the whole State is divided into (*a*) towns and (*b*) shires. The duties, rights, and responsibilities of the local authorities with regard to roads, streets, and bridges are regulated by the Local Authorities Act of 1902. The councils are invested with full powers to open, close, divert, or widen streets, roads, and bridges, and to make by-laws for the regulation of traffic, etc. The members of the councils are elected by the ratepayers, and with the aid of executive officers they undertake the supervision and control of all necessary constructions and improvements of roads and bridges within their district. The rates which the councils are empowered to levy are supplemented by Government grants. Separate returns as to the expenditure by towns and shires on roads and bridges are not available, the amounts being included in the returns of expenditure on public works, particulars as to which expenditure may be found in the Section of this book on *Local Government*.

6. **South Australia.**—Under the provisions of the District Councils Acts, 1887 to 1904, and the Municipal Corporations Acts, 1890 to 1903, and of the Roads Acts, 1884 to 1908, the councils are invested with full powers as to the opening and making of new streets and roads, and the diverting, altering, or increasing the width of existing roads; as to raising, lowering, or altering the ground or soil of any street or road; and as to the construction, purchase, and management of bridges, culverts, ferries, and jetties.

(i.) *Main Roads and District Roads.* All the roads in each district are classified either as main roads or as district roads. Both classes of roads are under the direct control either of Municipal Corporations or of District Councils, but in the case of main roads the expenditure on construction and maintenance is chiefly provided for by Government grants, which are paid into a main road fund, while the expenditure on district roads is paid for out of general rates, and out of subsidies on the amount of such rates, granted by the central Government. Under the Main Roads Act 1908, a number of roads was declared to be main roads.

The total estimated length of streets and roads in South Australia up to the 30th June, 1909, was as follows:—

SOUTH AUSTRALIA.—ESTIMATED LENGTH OF ROADS AND STREETS, 1909.

Particulars.	Woodblocked.	Macadamised.	Other.	Total.
Miles	½	8,178	26,218	34,396½

(ii.) *Expenditure by Corporations on Main and District Roads.* The following table shews the expenditure by municipal corporations on both main and district roads during each year from 1901 to 1909 inclusive:—

SOUTH AUSTRALIA.—EXPENDITURE BY CORPORATIONS ON STREETS, ROADS, AND BRIDGES, 1901 to 1909.

Year.[1]	District Roads.			Main Roads Fund.			
	Total Receipts.	Expenditure.		Receipts.		Expenditure.	
		Construction.	Maintenance.	From Main Road Grants.	Total.	Construction.	Maintenance.
	£	£	£	£	£	£	£
1901 ...	148,872	4,906	50,628	7,403	8,738	159	7,745
1902 ...	159,753	11,671	46,980	5,470	7,249	117	6,580
1903 ...	155,857	3,005	52,539	5,458	6,986	...	6,433
1904[2]	158,540	10,235	50,769	5,116	6,559	85	6,109
1905 ...	162,850	17,475	43,245	6,125	8,420	419	7,320
1906 ...	166,097	14,521	48,901	7,028	8,144	192	7,291
1907 ...	154,918	5,697	47,024	6,815	7,506	681	6,703
1908 ...	169,058	3,968	43,538	7,178	7,917	130	8,054
1909 ...	182,145	9,218	63,474	9,679	12,312	258	11,849

1. Up to and including the year 1903 the financial year ended on the 31st December, but after that date ends on the 30th November. 2. For eleven months ended the 30th November.

(iii.) *Expenditure of District Councils on Main and District Roads.* The following table gives similar information with respect to main and district roads under the control of District Councils:—

SOUTH AUSTRALIA.—EXPENDITURE BY DISTRICT COUNCILS ON STREETS, ROADS, AND BRIDGES, 1901 to 1909.

Year Ended 30th June.	District Roads.			Main Roads Fund.			
	Total Receipts.	Expenditure.		Receipts.		Expenditure.	
		Construction.	Maintenance.	From Main Road Grants.	Total.	Construction.	Maintenance.
	£	£	£	£	£	£	£
1901 ...	147,309	18,026	47,379	72,980	100,077	11,861	67,487
1902 ...	134,780	22,925	43,430	62,990	87,070	6,039	63,084
1903 ...	134,216	20,573	44,070	56,092	74,877	5,766	54,778
1904 ...	140,216	22,682	47,519	54,645	69,868	6,280	49,465
1905 ...	150,309	32,157	37,613	55,799	75,622	4,650	56,448
1906 ...	132,085	24,564	47,502	60,558	63,723	5,293	54,027
1907 ...	128,787	27,795	47,731	70,560	70,769	5,598	57,152
1908 ...	134,169	35,161	48,289	80,834	80,875	6,277	70,343
1909 ...	140,552	35,922	60,328	79,194	79,554	10,610	69,387

7. **Western Australia.**—In Western Australia the construction, maintenance, and management of roads and bridges throughout the State, except those within the boundaries of municipalities, are under the control of District Road Boards, constituted by the Roads Acts 1902 to 1904.

(i.) *District Roads and Bridges.* Under the provisions of these Acts any part of the State, not within a municipality, may be constituted by the Governor-in-Council into a Road District, under the control of a Board of seven members elected by the ratepayers. The Board is invested with full powers for controlling and managing all roads and bridges

within the district, and is empowered to make by-laws for the general regulation of traffic, to control the weight of engines and machines permitted to cross any bridge or culvert, to regulate the speed limits of vehicles, lights to be carried by vehicles, the lighting of streets and roads, and the licensing of bicycles and motor cars. A District Road Board, may not, however, construct any road or street less than sixty-six feet wide without the consent of the Governor, nor any bridge or culvert at a greater cost than £100, except by the direction of the Minister. The construction of the more important bridges and culverts is generally carried out by the Government, the work, after completion, being handed over to the Road Board for maintenance. In case of land being required for the purpose of constructing a new street or road, or for widening an existing street or road, the provisions of the Public Works Act of 1902 are incorporated in the Roads Acts. A Board may levy general rates within its district not exceeding one shilling and sixpence in the £ on the annual ratable value, and, if valued on the basis of unimproved values of lands, the general rate must not exceed twopence half-penny in the £ on the capital unimproved value. Boards are also empowered to raise loans for the purpose of constructing new roads, but the amount of such loans must not be greater than ten times the average amount of general rates collected for two years. For the purpose of paying the interest on money borrowed a Board may levy a special rate not exceeding one shilling and sixpence in the £. District Road Boards may also exercise the powers of Drainage Boards under the provisions of the Land Drainage Act of 1900.

(ii.) *Municipal Streets, Roads, and Bridges.* As regards roads, streets, and bridges within municipalities, these are under the control of local authorities elected under the provisions of the Municipal Corporations Act 1906. The municipal councils are invested with full powers for making, maintaining, and managing all streets, roads, and bridges within the municipal area, and may request the Governor to declare any such land reserved, used, or by purchase or exchange acquired for a street or way, to be a public highway, and on such request the Governor may, by notice in the *Gazette*, proclaim such highway absolutely dedicated to the public.

(iii.) *Length of Roads, Number of Bridges, and Expenditure on Roads and Bridges.* The following table gives particulars of the operations of the Road District Boards since the 1st January, 1903, when the Roads Act of 1902 (now amended by the Act of 1904) came into force:—

WESTERN AUSTRALIA.—PARTICULARS OF ROADS UNDER CONTROL OF DISTRICT ROAD BOARDS, 1904 to 1909.

Year ended the 30th June.	Area.	Revenue.				Expenditure.	Length of Roads.				No. of Bridges and Culverts.	
		From General Rates.	From Grants and Subsidies.	From other Sources.	Total.		Cleared only.	Formed only.	Metalled or otherwise Constructed.	Total.	Bridges.	Culverts.
	Sq. m.	£	£	£	£	£	Miles.	Miles.	Miles.	Miles.	No.	No.
1904[1]	976,006	18,593	141,409	16,139	176,141	126,736	6,498	2,625	1,395	10,518	287	2,745
1905	975,802	23,558	90,475	11,547	125,580	122,091	8,268	2,864	1,813	12,945	319	3,272
1906	975,792	28,219	85,280	12,746	126,245	125,616	8.556[2]	3,970[2]	1,952[2]	14,478[2]	443[3]	3,792[3]
1907	975,780	35,088	60,313	13,796	109,197	126,716	9,269[4]	3,878[5]	2,088[5]	15,235[4]	491[6]	3,961[5]
1908	975,780	40,491	58,311	14,707	113,509	120,088	10,821	4,760	2,337	17,918	509	4,148
1909	975,781	46,034	52,382	15,869	114,285	116,723	12.537[7]	5,195	2,797	20,529	554	4,574

1. The returns given for 1904 cover a period of eighteen months, from the 1st January, 1903, to the 30th June, 1904. 2. Exclusive of four Boards which have not supplied the information. 3. Exclusive of three Boards which have not supplied the information. 4. Exclusive of six Boards. 5. Exclusive of seven Boards. 6. Exclusive of five Boards. 7. Exclusive of three Boards.

The following table gives similar information with reference to roads under the control of municipalities under the Municipal Institutions Act 1900 and the Municipal Corporations Act 1906:—

WESTERN AUSTRALIA.—PARTICULARS OF STREETS, ROADS, AND BRIDGES UNDER THE CONTROL OF MUNICIPALITIES, 1901 to 1909.

Year ended the 31st October.	No. of Municipalit's.	Length of Streets, Roads, and Bridges.					Revenue.		Expenditure.	
		Paved, M't'll'd or Gr'v'lld	Form'd only.	Clear'd only.	Not Clear'd	Total.	From Rates.	From Grants.	Works and Impr'v-ments.	Street Light'g and Wat'r'g
		Miles.	Miles.	Miles.	Miles.	Miles.	£	£	£	£
1901[1]	42	195	30	149	137	511	78,021	66,850	111,256	15,969
1902	44	265	52	221	249	787	94,894	81,436	125,721	19,434
1903	44	291	55	282	227	855	104,760	80,938	142,347	20,745
1904	43	325	64	252	260	901	119,110	90,868	187,747	23,361
1905	43	354	74	258	256	942	130,575	85,798	183,226	25,404
1906	45	396	79	275	292[2]	1,042	146,206	95,997	165,421	31,045
1907	47	441	84	304	262[3]	1,091	136,868	85,473	132,103	34,135
1908	47	474	90	323	272[2]	1,159	139,228	67,315	103,943	31,682
1909	46	486	88	322	321	1,217	138,445	37,301	83,283	30,626

1. Returns incomplete, not having been furnished when asked for. 2. Exclusive of three municipalities, which have not supplied the information. 3. Exclusive of four municipalities.

8. **Tasmania.**— In 1906 all the existing Road Trusts and Main Road Boards were abolished by the Local Government Act, which provided that the councils of all municipalities constituted under the Act should exercise all powers conferred upon, and should be liable to all the obligations imposed upon Road District Trusts and Main Road Boards by the Roads Act of 1884. The whole State, with the exception of Hobart and Launceston, is divided into municipal districts, each of which is under the control of a warden and councillors, and each of which is deemed to be a road district and a main road district for the purposes of the Roads Act 1884.

(i.) *Mileage of Roads and Number of Bridges, 1909.* The following table gives particulars for the year 1909 as to lengths of roads and number of bridges and culverts under the control of the municipalities :—

TASMANIA.—ROADS AND BRIDGES IN MUNICIPALITIES, 1909.

Roads.			Bridges.	Culverts.
Macadamised or Gravelled.	Other.	Total.		
Miles.	Miles.	Miles.	No.	No.
5,629	4,526	10,155	1,120	19,702

(ii.) *Revenue and Expenditure, 1909.* The following table gives particulars for the year 1909 of the revenue and expenditure of municipal councils in respect of roads and bridges :—

TASMANIA.—ROADS AND BRIDGES, REVENUE AND EXPENDITURE, 1909.

Revenue.				Expenditure.
From Government.	Rates.	All other.	Total.	
£	£	£	£	£
44,293	173,452	92,245	309,990	318,501

§ 2. Railways.

(A.) General.

1. **Improvements in Railway Statistics.**—In February, 1909, a report was issued by the Commonwealth Statistician to the Minister for Home Affairs on the subject of *The Desirability of Improved Statistics of Government Railways in Australia.* In this report a number of matters were specified in respect to which there was want of uniformity in the form and basis of the statistics published in the annual reports of the Railway Departments of the several States, and the importance and desirability of obtaining more complete and uniform statistics, especially with regard to "passenger-miles" and "ton-miles," were emphasised. This report was brought forward and considered by the Commissioners and General Managers of the Australian State Railways at their last annual conference, held in Melbourne in May, 1909, with the result that resolutions were passed agreeing to publish in the annual reports of the State Railway Departments uniform statistics regarding all the matters referred to by the Commonwealth Statistician, with two exceptions, viz.:—(*a*) with respect to the classification of tonnage carried and the revenue derived therefrom (see further (B) paragraph 17 hereof), and (*b*) with respect to "passenger-mileage" and "ton-mileage" (see further (B) paragraph 18 hereof). The resolutions referred to were to take effect from the 1st July, 1909.

2. **Railway Communication in the Commonwealth.**—Although it was early recognised that railway construction was essential to the proper development and settlement, and to the future commercial prosperity of a large country like Australia, ill supplied with navigable rivers, the progress made in opening up lines during the twenty years which followed the completion of the first line in 1855, was very slow. This was no doubt due partly to the difficulty of borrowing money at a reasonable rate of interest, owing to the depreciation of Australian securities in London, and partly to the sparseness of the population, which it was feared would not justify the necessary expenditure. In the vicinity of Sydney, also, the ranges of mountains in the districts near the coast had to be either traversed or pierced by tunnels at a considerable expenditure of time and money, thus retarding the expansion of the railway systems which have their starting point at that city. Since the year 1875, however, greater activity in the construction of railways has been manifested, and satisfactory progress has been made in all the States of the Commonwealth. The State Governments now fully recognise the great importance to the community of carrying on the work of construction, and of conducting the administration and management of the railways on businesslike principles, free from undue political influence, and yet with regard to the general development of the country. In the eastern, south-eastern, and southern parts of Australia there now exists a considerable network of railway lines converging from the various agricultural, pastoral and mining districts towards the principal ports, which are themselves connected by systems of lines running roughly parallel to the coast. These are shewn on the accompanying map. In the east, lines radiating from Townsville, Rockhampton, Brisbane and Sydney extend inland in various directions for distances ranging up to over 600 miles; in the south-east there are numerous lines, those in Victoria converging towards Melbourne, while others in New South Wales have their terminus in Sydney; in the south there are three main lines, with numerous branches, running from Melbourne, while from Adelaide one main line, with several branches to the coastal towns, runs inland in a northerly direction for a distance of nearly 700 miles, and another line runs in a south-easterly direction to various ports and meeting the main line from Melbourne on the border of South Australia and Victoria. In addition to these main lines and their numerous branches, there are extensive suburban systems in Melbourne and some of the other cities of Australia, a considerable portion of the suburban traffic in Sydney being conducted by means of electric tramways. All these lines which have just been referred to are connected together by the main interstate line, which permits of direct communication between the four capital towns—Brisbane, Sydney, Melbourne, and Adelaide—a distance from end to end of 1790½ miles. The journey from Brisbane

to Adelaide by rail occupies just over three days, including one stop of 8 hours 50 minutes at Sydney, and another of 3 hours 39 minutes at Melbourne. The distance between the capitals and the times occupied are as follow:—

Brisbane to Sydney ...	... 725 miles	... 27 hours 20 min.
Sydney to Melbourne ...	... 582½ „	... 16 „ 51 „
Melbourne to Adelaide ...	... 482¾ „	... 17 „ 26 „

The longest railway journey which can be undertaken in Australia, on one continuous line of railway, is from Longreach in Queensland to Oodnadatta in South Australia, a total distance of 3303 miles. In Western Australia there is a connected system of main or trunk lines between the ports of the State and the agricultural, pastoral, and mining districts. From these main lines a number of branches has been constructed, opening up fresh agricultural areas to the ports and markets of the State. The majority of such branch lines will, on being ultimately extended, form connections between main lines and thus provide short and convenient routes between principal centres. In the northern parts of Queensland and in the Northern Territory there are also a number of disconnected lines running inland from the more important ports. In Tasmania the principal towns are connected by a system of lines, and there are also, more especially in the western districts, several lines which have been constructed for the purpose of opening up mining districts.

3. **Mileage Open for Traffic.**—In all the States of the Commonwealth the principle that the control, construction, and maintenance of the railways should be in the hands of the Government has long been adhered to, excepting in cases presenting unusual circumstances. In various parts of the Commonwealth lines have been constructed and managed by private companies, but at the present time practically the whole of the railway traffic in the Commonwealth is in the hands of the various State Governments. A large proportion of the private lines which are at present running have been laid down for the purpose of opening up forest lands or mining districts, and are not generally used for the conveyance of passengers or the public conveyance of goods. (See D. *Private Railways*, hereinafter.)

(i.) *Mileage of Government and Private Lines, 1855 to 1910.* The subjoined table shews the mileage of both Government and private lines open for traffic (exclusive of sidings and cross-overs) in each State and also in the Commonwealth at suitable periods since the inauguration of railways in Australia in 1855 up to the year 1910. The figures from 1855 to 1881 are given as up to the end of the calendar year; later figures are as up to the end of the financial year ended on the 30th June, unless otherwise stated, excepting the mileages for private lines which are in all cases taken for the calendar year:—

GOVERNMENT AND PRIVATE RAILWAYS.—MILEAGE OPEN, 1855 to 1910.

Year.	N.S.W.	Vict.	Q'land.	S. Aust.	N. Ter.	W. Aust.	Tas.	Cwlth.
	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
1855	14	2½	*	†6¾	*	*	*	23¼
1861	73	114	*	56	*	*	*	243
1871	358	276	218	133	*	12	45	1,042
1881	1,040	1,247	800	845	*	92	168	4,192
1890-1	2,263	2,763	2,205	1,666	145½	‡656	‡425	10,123½
1900-1	2,926	3,238	2,904	1,736	145½	1,984	§618	13,551½
1908-9	3,889	3,457	3,866	1,946	145½	2,683	667	16,653½
1909-10	3,909	3,542	4,205	1,970	145½	2,987	673	17,431½

* No railways yet constructed. † To the 31st December. This line between Goolwa and Port Elliot was opened in 1854 as a horse tramway, but now forms part of the railway system. ‡ To the 31st December, 1891. § To the 31st December, 1901.

It will be seen from the above table that the rate of construction up to the year 1871 was very slow, the average annual length of lines opened from 1861 to 1871 being only 80 miles for the whole Commonwealth. By the middle of the following decade, however, the

principal mountain ranges had been crossed, and the work of construction could be proceeded with at a greater rate, and at a less cost per mile. The greatest period of activity was from 1881 to 1891, when the average annual length opened for traffic was 593 miles for the whole Commonwealth; the corresponding figures for the following periods from June, 1891, to June, 1901, and from June, 1901, to June, 1910, were 343 miles and 431 miles respectively.

4. **Comparative Mileage of State-owned and Private Lines, 1910.**—The subjoined table shews for each State and for the Commonwealth (*a*) the length of lines owned by the respective State Governments, all of which lines are of course open for general use by the public, (*b*) the length of private lines available for general use by the public, and (*c*) the length not so available. The mileages specified in the case of State-owned lines are as up to the 30th June, 1910; those given for private lines are as up to the 31st December, 1909.

GOVERNMENT AND PRIVATE RAILWAYS.—COMPARATIVE MILEAGE OF STATE-OWNED LINES, OF PRIVATE LINES AVAILABLE FOR GENERAL TRAFFIC, AND OF PRIVATE LINES NOT SO AVAILABLE, 1909-10.

State.	State-owned Lines.	Private Lines available for General Traffic.	Total Open for General Traffic.	Private Lines used for Special Purposes only.	Grand Total.
	Miles.	Miles.	Miles.	Miles.	Miles.
New South Wales	3,643	141	3,784	125	3,909
Victoria... ...	3,491	14	3,505	37	3,542
Queensland ...	3,661	352	4,013	192	4,205
South Australia ...	1,912	...	1,912	58	1,970
Northern Territory	145½	...	145½	...	145½
Western Australia	2,145	277	2,422	565	2,987
Tasmania ...	469	165	634	39	673
Commonwealth	15,466½	949	16,415½	1,016	17,431½

5. **Comparative Railway Facilities in Different States, 1910.**—The area of territory and the population per mile of line open to the public for general traffic (including both Government and private lines) on the 30th June, 1910, are shewn in the subjoined statement for each State and also for the Commonwealth:—

GOVERNMENT AND PRIVATE RAILWAYS.—COMPARISON OF RAILWAY FACILITIES IN DIFFERENT STATES, 1910.

State.	Population, 30th June, 1910.	Area.	Per Mile of Line Open.	
			Population.	Area.
	Number.	Sq. miles.	Number.	Sq. miles.
New South Wales	1,643,264	310,372	422	79.6
Victoria	1,308,705	87,884	369	24.8
Queensland	589,586	670,500	140	159.4
South Australia	414,493	380,070	210	192.9
Northern Territory	3,000	523,620	21	3,598.7
Western Australia	279,360	975,920	93	326.7
Tasmania	183,387	26,215	272	38.9
Commonwealth ...	4,421,795	2,974,581	254	170.6

6. **Classification of Lines according to Gauge, 1909-10.**—The subjoined tables shew the total mileage, exclusive of sidings and cross-overs, of (i.) Government railways;

(ii.) Private railways open to the public for general traffic; and (iii.) Private lines used for special purposes, classified according to gauge. Particulars of Government railways are up to 30th June, 1910, and of private railways to the 31st December, 1909.

GOVERNMENT AND PRIVATE RAILWAYS.—CLASSIFICATION ACCORDING TO GAUGE, 1909-10.

State.	Mileage having a Gauge of—					Total.
	5 ft. 3 in.	4 ft. 8½ in.	3 ft. 6 in.	2 ft. 6 in.	2 ft.	
GOVERNMENT RAILWAYS.						
	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
New South Wales ...	...	3,643	...	...	...	3,643
Victoria	3,384	...	...	107	...	3,491
Queensland ...	...	...	3,661	...	...	3,661
South Australia ...	599	...	1,459	...	...	2,058
Western Australia ...	...	...	2,145	...	...	2,145
Total, Mainland...	3,983	3,643	7,265	107	...	14,998
Tasmania... ...	...	...	446	...	23	469
Commonwealth ...	3,983	3,643	7,711	107	23	15,467
PRIVATE RAILWAYS OPEN FOR GENERAL TRAFFIC.						
New South Wales ...	45	60	36	...	...	141
Victoria	14	...	...	...	...	14
Queensland ...	...	...	276	...	76	352
South Australia ...	...	...	...	...	...	...
Western Australia ...	...	...	277	...	...	277
Tasmania... ...	...	...	155	...	10	165
Commonwealth ...	59	60	744	...	86	949
PRIVATE RAILWAYS OPEN FOR SPECIAL PURPOSES.						
New South Wales ...	...	121	4	...	...	125
Victoria	37	...	...	...	...	37
Queensland ...	...	...	188	...	4	192
South Australia ...	...	...	58	...	...	58
Western Australia ...	...	...	503*	...	62†	565
Tasmania‡	...	...	25	...	14	39
Commonwealth ...	37	121	778	...	80	1,016
TOTAL.						
New South Wales ...	45	3,824	40	...	...	3,909
Victoria	3,435	...	...	107	...	3,542
Queensland ...	...	...	4,125	...	80	4,205
South Australia ...	599	...	1,517	...	...	2,116
Western Australia ...	...	...	2,925	...	62	2,987
Tasmania	...	...	626	...	47	673
Commonwealth ...	4,079	3,824	9,233	107	189	17,432

* Including 6 miles of 3 ft. 4 in. gauge. † Including 18 miles of 1 ft. 8 in. gauge. ‡ Figures are for 1908.

(B.) Government Railways.

1. **Mileage Open, 1901 to 1910.**—The following table shews the length of Government railways open for traffic on the 30th June in each year since the inception of the Commonwealth:—

GOVERNMENT RAILWAYS.—MILEAGE OPEN FOR TRAFFIC ON THE 30th JUNE IN EACH YEAR FROM 1901 to 1910 INCLUSIVE.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	N. Ter.	W. Aust.	Tas.	C'wealth.
	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
1901 ...	2,845½	3,237	2,801	1,736	145½	1,355	*457½	12,577½
1902 ...	3,026	3,302	2,801	1,736	145½	1,360	*462	12,832½
1903 ...	3,138½	3,383	2,711	1,736	145½	1,516	*462	13,092
1904 ...	3,281	3,381	2,928	1,736	145½	1,541	462	13,474½
1905 ...	3,281	3,394	3,092	1,745½	145½	1,605	462½	13,725½
1906 ...	3,390	3,394	3,137	1,745½	145½	1,611½	462½	13,886
1907 ...	3,453	3,396	3,137	1,832	145½	1,764	462½	14,190
1908 ...	3,472½	3,396	3,359	1,879¼	145½	1,943	463	14,658¼
1909 ...	3,623¼	3,410	3,498	1,888	145½	2,044½	463	15,072¼
1910 ...	3,643	3,491	3,660¾	1,912½	145½	2,144½	469½	15,466½

* To the 31st December.

The following statement shews the actual mileage opened for traffic in the year 1909-10, and also the annual average increase in mileage opened since 1901 in each State:—

GOVERNMENT RAILWAYS.—MILEAGE OPENED ANNUALLY.

State	N.S.W.	Vic.	Qld.	S.A.	N.T.	W.A.	Tas.	Cwlth.
Mileage opened during 1909-10	19¾	80¾	162¾	24¼	...	100	6½	394
Average annual mileage opened (1901 to 1910)	88½	28	95½	19¾	...	87¾	1¼	320¾

(i.) *New South Wales.* During the year ended 30th June, 1910, an extension from Casino to Kyogle was opened for traffic.

(ii.) *Victoria.* The following lines were opened for traffic during 1909-10:—Ultima to Chillingollah (20 miles); Alexandra-road to Alexandra (4¼ miles); Moe to Walhalla, 2 ft. 6 in. gauge, (26 miles); Nyora to Woolamai (16¾ miles); and Woolamai to Powlett coal-fields (13¾ miles).

(iii.) *Queensland.* The increase of 162¾ miles in the mileage opened for traffic in 1909-10 was due to the opening of the following lines:—Caboolture to Woodford (18 miles); Mount Chalmers to Yeppoon (17 miles); Tolga to Yungaburra (10 miles); Clermont to Blair Athol (11 miles); Goondiwindi to Talwood (53¾ miles); and Cloncurry to Friezland (53 miles).

(iv.) *South Australia.* The only line opened for traffic in this State during the year 1909-10 was that from Laura to Booleroo Centre, a distance of 24¼ miles.

(v.) *Western Australia.* The following new sections of railway were taken over from the Public Works Department during the year 1909-10 and opened for public traffic:—Mundaring Weir Branch (5 miles); Widgemooltha to Norseman (56¾ miles); Newcastle to Bolgart (23½ miles); and Pinjora to Marrinup (14¾ miles).

(vi.) *Tasmania.* During the year 1909-10 an extension of the Derwent Valley line from Glenora to Russell was opened for traffic.

2. **Non-conformity of Gauge.**—With but few exceptions, all the railway lines in the Commonwealth open for general traffic are now owned and managed by the respective States in whose territory they run, but, unfortunately for the purpose of interstate

traffic, the construction of the various systems in different parts of Australia has proceeded without uniformity of gauge. In 1846 Mr. Gladstone, then Colonial Secretary, recommended in a despatch to the Governor of New South Wales that the 4 ft. 8½ in. gauge should be adopted. In 1850, however, the engineer to the Sydney Railroad and Tramway Company strongly advocated the adoption of the 5 ft. 3 in. gauge, and in 1852 an Act was passed making it compulsory that all railways in New South Wales should be constructed to the wider gauge, the Governors of Victoria and South Australia being duly advised of the step that had been taken. But in 1852 the company mentioned, having changed their engineer, also changed their views as to the gauge question, and in the following year they succeeded in obtaining the repeal of the Act of 1852 and in passing another, under the provisions of which the narrower gauge was made imperative. This step was taken without the concurrence of the other States concerned, and a considerable amount of ill-feeling arose, especially in Victoria, where two private companies had already placed large orders for rolling stock constructed to the broad gauge originally chosen. The result was that it was decided in Victoria to adhere to the 5 ft. 3 in. gauge as the standard gauge for that State, while the Sydney Railroad and Tramway Company proceeded with the construction of their lines to the 4 ft. 8½ in. gauge, and these two gauges have since been adhered to as the standard gauges of the respective States. The Queensland Government had at the outset adopted a gauge of 3 ft. 6 in. as being best suited to the requirements of the colony, and have since adhered to that gauge throughout the State, so that all goods have to be discharged and reloaded at the boundary between that State and New South Wales. In South Australia the broad gauge of Victoria was at first adopted, and the part of the interstate line between Adelaide and the Victorian boundary was constructed to that gauge, so that the line from Melbourne to Adelaide is uniform. In the lines which have been constructed more recently, however, and in the Northern Territory, the South Australian Government has, with a view to economy in construction, adopted a gauge of 3 ft. 6 in. In Western Australia and Tasmania the 3 ft. 6 in. gauge was also adopted. It was recognised in both these States that the construction of railways was essential to their proper development, but as their financial resources would not bear a heavy initial expenditure in connection with the establishment of railway lines, it was decided to adopt the narrow-gauge. In Victoria light railways have been constructed in recent years to a gauge of 2 ft. 6 in., whilst in Tasmania short lengths have been laid down to a 2 ft. gauge.

3. **Interstate Communication.**—Until the railway systems of the eastern States were connected at the common boundaries the inconvenience of non-conformity of gauge was not felt. Since then, however, the necessary transhipments of both passengers and goods have been a source of trouble, delay, and expense. On the 14th June, 1883, a railway bridge over the River Murray at Wodonga was opened for traffic, and communication was then established between Melbourne and Sydney. On the 19th January, 1887, the last section of the Victorian line to Serviceton, on the South Australian border, was completed, and a junction was thus effected with the South Australian line to Adelaide. On the 16th January, 1888, a junction was effected between the New South Wales and Queensland lines at Wallangarra, but there was still a break in the line from Sydney at the Hawkesbury River, thirty-six miles from Sydney. This last link was, however, completed on the 1st May, 1889, by the opening of the Hawkesbury River bridge, 2900 feet in length, and railway communication was thus established between the four capital cities, Brisbane, Sydney, Melbourne, and Adelaide.

In February, 1911, a conference of officers of the Commonwealth and State Governments was held in Melbourne under the presidency of the Minister for Defence to consider matters of defence as affected by the facilities for transport of troops and armaments in the event of war. The proposal laid before the conference was that a railway central staff should be formed, so that in case of war the Defence Department would have at hand not only a well considered scheme of mobilisation, but also an organised staff of men ready to carry out the work of transport. The deliberations of this conference were held in private, and up to the time of publication of this section of the Year Book, no statement as to the results of the conference had been made public.

4. **Unification of Gauge.**—The development of the railway systems of the Commonwealth has shewn that the adoption of different gauges on the main lines in the several States was a serious error. The extra cost, delay, and inconvenience incurred by the necessity of transferring through-passengers and goods at places where there are breaks of gauge, though not at present of any appreciable magnitude, are becoming more serious as the volume of business increases. As an indication of the extra cost thus involved the following junction charges payable on interstate traffic between New South Wales and Victoria and *vice-versa* are given :—

JUNCTION CHARGES.—NEW SOUTH WALES AND VICTORIA, 1910.

General Merchandise. 1st to 3rd Classes.	Vehicles for which rate per mile operates.	Live Stock.	Empty Returns.	Other Goods.*
2s. 6d. per ton	1s. 6d. each	3s. per truck.	1s. per ton.	1s. 6d. per ton.

* No junction charge is made on wool.

Although the cost of alteration to a uniform gauge would be great, many propositions have from time to time been put forward with the object of securing such a gauge, and attention has been drawn to the importance of the unification of gauges before further expenditure on railway construction is incurred by the States. The problem is, however, one which is by no means easy of solution, and the difficulties are increased by the introduction of what may be called questions of local or State policy. That its solution would facilitate the development of commerce and the settlement on the land throughout the Commonwealth, is now widely recognised. The economic disadvantages of breaks of gauge, and of any artificial restrictions in regard to trade finding its proper geographical outlets, are also seen by dispassionate observers. It is obvious, too, that in the event of a foreign invasion of any part of the seaboard, the interchange and concentrations of rolling stock for the transport of men and war material would be impeded, and might result in confusion and loss. It is asserted, moreover, that unification of gauges would tend to reduce to a negligible quantity all tendency to disorganisation and undue congestion likely to occur at times of bountiful seasons; that various trades and industries would be benefited by the concentration, at times of abnormal or periodic activity, of idle trucks from other States; that there would be a large saving in the aggregate capital expenditure on rolling stock; in other words, that the fullest use of all rolling stock and the meeting of all exigencies would be facilitated.

As regards the unification of gauges, the question naturally arises as to which gauge, if any, should be adopted as the universal gauge of the Commonwealth. As regards Government railways only, the New South Wales gauge has a mileage of 3643; Victoria and South Australia have a combined mileage of 3983 of 5 ft. 3 in. gauge; while Queensland, South Australia, the Northern Territory, and Western Australia have together 7265 miles of 3 ft. 6 in. gauge. By far the greater part of the mileage of private railways open for general traffic has also been constructed to the 3 ft. 6 in. gauge. The mere question of preponderance of mileage, therefore, indicates the 3 ft. 6 in. gauge for adoption. But this question is obviously subordinate to those involving engineering and economic considerations. Thus, the relative efficiency from the widest point of view, the relative costs of alterations of permanent way and rolling stock, of carrying capacity and speed, that is to say, questions of a technical nature about which figures are not available, enter into the grounds for decision. As regards the unification of the New South Wales and Victorian lines, the advantage of reducing the broad gauge to the 4 ft. 8½ in. gauge is that there would be no necessity for the alteration of tunnels, cuttings, bridges, or viaducts.

In 1897 a conference was held between the Railway Commissioners of New South Wales, Victoria, and South Australia to consider and report upon the unification of the railway gauges of these States. In their report the Commissioners specified the mileage

including double roads, sidings, and private coal lines) of 4 ft. 8½ in. and 5 ft. 3 in. gauges in the several colonies to be as follows:—

UNIFICATION OF 4 ft. 8½ in. AND 5 ft. 3 in. GAUGES IN NEW SOUTH WALES, VICTORIA, AND SOUTH AUSTRALIA. MILEAGE OPEN, 1897.

Particulars.	New South Wales.		Victoria.	South Aust.	Total.	
Gauge ...	4 ft. 8½ in.	5 ft. 3 in.	5 ft. 3 in.	5 ft. 3 in.	4 ft. 8½ in.	5 ft. 3 in.
Mileage ...	3,340	51	3,868	590	3,340	4,509

The cost of unification of the gauges as estimated by the Commissioners at the conference was as follows:—

COST OF UNIFICATION OF 4 ft. 8½ in. AND 5 ft. 3 in. GAUGES, NEW SOUTH WALES, VICTORIA, AND SOUTH AUSTRALIA, 1897.

Particulars.	Alteration of Permanent Way and Works.	Alteration of Rolling Stock.	Temporary Workshops and Material.	Total.
	£	£	£	£
New South Wales, conversion from 4 ft. 8½ in. to 5 ft. 3 in.	2,518,000	1,702,000	40,000	4,260,000
Victoria, South Australia, and *New South Wales* (51 miles) conversion from 5 ft. 3 in. to 4 ft. 8½ in.	493,000	1,827,500	40,000	2,360,500

It may be seen that the difference in estimated cost in favour of change from the 5 ft. 3 in. gauge to 4 ft. 8½ in. gauge was £1,899,500. The Commissioners agreed that the work could be carried out within five years from the date of its commencement.

Military officers have asserted that from a defence point of view it is imperative that the present mixture of gauges should be abolished. Reference has already been made (see paragraph 3 hereof) to the Railway War Conference, which was called more particularly to deal with the break of gauge problem as it would affect the transport of troops and armaments. It may also be observed that in South Australia the Break of Gauge Commission is enquiring into the local aspect of what is practically the same problem, presented in its commercial aspect only.

5. Average Mileage Worked, Train Miles Run, Number of Passenger Journeys, and Tonnage of Goods and Live Stock Carried on Government Railways, 1901 to 1910.—The table at head of page gives the actual mileage open for traffic at the end of each financial year, but, in considering the returns relating to revenue and expenditure and other matters, it is desirable to know the average number of miles actually worked during each year. The next table shews the average number of miles worked, the total number of train miles run, the number of passenger journeys, and the tonnage of goods and live stock carried by the Government railways of each State during each financial year from 1900-1 to 1909-10 inclusive:—

GOVERNMENT RAILWAYS.—AVERAGE MILEAGE WORKED, TRAIN MILES RUN, NUMBER OF PASSENGER JOURNEYS, AND TONNAGE OF GOODS AND LIVE STOCK CARRIED, 1901 to 1910.

Year.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	N. Ter.	West. Aust.	Tasmania.	C'wealth.
AVERAGE MILEAGE WORKED.								
1900-1	2,818	3,228	2,801	1,736½	145½	1,355	460*	12,544
1901-2	2,953	3,265	2,801	1,736½	145½	1,356	468*	12,725
1902-3	3,074	3,335	2,777	1,736½	145½	1,434	469*	12,971
1903-4	3,224	3,371	2,827	1,736½	145½	1,535	469	13,308
1904-5	3,281	3,384	3,066	1,744½	145½	1,568	470	13,659
1905-6	3,367	3,394	3,109	1,745½	145½	1,607	470	13,838
1906-7	3,428	3,395	3,137	1,814½	145½	1,676	470	14,066
1907-8	3,469	3,396	3,239	1,860½	145½	1,830	470	14,410
1908-9	3,560	3,397	3,444	1,881½	145½	1,971	470	14,869
1909-10	3,625	3,441	3,533	1,893½	145½	2,102	474	15,214
TRAIN MILES RUN (,000 OMITTED).								
1900-1	10,764	11,066	5,815	4,393	30	4,126	896*	37,090
1901-2	11,649	11,285	5,666	4,196	30	4,508	903*	38,237
1902-3	11,548	10,236	4,947	3,770	31	4,611	932*	36,125
1903-4	10,400	9,173	4,647	3,739	32	4,594	948†	33,533
1904-5	10,468	9,023	4,918	3,773	31	4,285	946	33,444
1905-6	11,864	9,392	5,282	3,875	30	4,360	946	35,749
1906-7	12,949	10,036	6,126	4,334	31	4,181	981	38,638
1907-8	14,251	10,383	6,558	5,010	31	3,964	1,028	41,225
1908-9	15,074	11,291	7,391	4,925	31	4,102	1,029	43,843
1909-10	15,468	11,706	8,157	5,421	30	4,398	1,060	46,240
NUMBER OF PASSENGER JOURNEYS (,000 OMITTED).								
1900-1	29,261	54,704	18,647	8,864	4	6,823	778	109,081
1901-2	30,885	57,465	18,421	9,643	4	8,158	762*	115,338
1902-3	32,384	54,798	17,353	9,061	4	9,106	815*	113,521
1903-4	33,793	54,282	17,528	9,747	4	10,226	873†	116,453
1904-5	35,158	59,702	7,656	9,867	4	11,845	824	125,056
1905-6	37,501	65,088	8,215	10,715	3	12,817	860	135,199
1906-7	41,413	70,170	9,302	11,498	3	13,180	952	146,518
1907-8	47,487	74,907	10,420	12,839	3	12,946	1,020	159,622
1908-9	52,052	81,021	11,522	13,853	3	12,717	1,547	172,715
1909-10	53,644	85,280	13,259	15,282	3	13,171	1,351	182,290
TONNAGE OF GOODS AND LIVE STOCK CARRIED (,000 OMITTED).								
			§				§	‖
1900-1	6,398	3,381	1,530	1,629	3	1,720	315*	14,976
1901-2	6,468	3,434	1,726	1,392	2	1,888	407*	15,317
1902-3	6,596	3,094	1,567	1,350	2	1,795	419*	14,823
1903-4	6,657	3,439	1,572	1,516	6	2,057	425†	15,672
1904-5	6,724	3,628	1,712	1,681	4	2,154	394	16,297
1905-6	7,629	3,676	1,792	1,732	5	2,097	399	17,330
1906-7	8,794	3,966	2,261	2,043	3	2,091	428	19,586
1907-8	10,175	3,755	2,424	2,256	3	2,059	465	21,137
1908-9	9,299	4,167	2,483	2,165	3	1,997	467	20,581
1909-10	8,393	4,468	2,656	2,481	2	2,242	423	20,665

* For the calendar years 1901, 1902, and 1903 respectively. The average mileage worked is larger than the actual mileage open, owing to the fact that the Government Railways have running powers over certain private lines. † The returns are for a period of six months ended the 30th June, 1904; the figures here given are estimated for a full period of twelve months. ‡ These figures are partly estimated, the actual returns excluding journeys by season ticket holders. § Exclusive of live stock. ‖ Exclusive of live stock returns for Queensland and Tasmania.

6. **Length and Gauge of Railway System in each State.**—A map shewing the State railway lines, and also the private lines open to the public for general traffic, in the different States of the Commonwealth is given at the end of this sub-section. In all the States the Government railways are grouped, for the purpose of convenience of administration and management, into several divisions or systems, some of which have already been briefly referred to above in dealing with the history of construction of the railways.

The subjoined summary shews concisely the gauge and length of the main and branch lines included in each division or system of the different States of the Commonwealth for the year ended the 30th June, 1910:—

GOVERNMENT RAILWAYS, 1909-10.

Particulars.	Length.	Gauge.
	Miles.	ft. in.
1. NEW SOUTH WALES.		
(i.) The Northern line and branches—		
(*a*) Main line. Strathfield-Wallangarra	489	4 8½
(*b*) Branch lines	472	4 8½
(ii.) The Grafton-Tweed line	168¾	4 8½
(iii.) The Western line and branches—		
(*a*) Main line. Granville-Bourke	495	4 8½
(*b*) Branch lines	714¼	4 8½
(iv.) The Southern line—		
(*a*) Main line. Granville-Wodonga	381	4 8½
(*b*) Branch lines	742½	4 8½
(v.) The South-coast (Illawarra) line—		
(*a*) Main line. Sydney to Nowra...	93	4 8½
(*b*) Branch lines	7	4 8½
(vi.) Suburban lines	40½	4 8½
(vii.) Broken Hill line. Broken Hill-Tarrawingee	40	4 8½
Total	3,643	...
2. VICTORIA.		
(i.) The South-eastern system—		
(*a*) Main lines. Dandenong-Port Albert, Aspendale-Stony Point	145	5 3
(*b*) Branch lines	43½	5 3
(ii.) The Eastern system—		
(*a*) Main lines. Dandenong-Bairnsdale, Bayswater-Gembrook, Croydon-Healesville	18	2 6
	202	5 3
(*b*) Branch lines	97	5 3
	29	2 6
(iii.) The North-eastern system—		
(*a*) Main line. Craigieburn-Wodonga	171	5 3
(*b*) Branch lines	30	2 6
	446½	5 3
(iv.) The Northern system—		
(*a*) Main line. Digger's Rest-Echuca	135	5 3
(*b*) Branch lines	946	5 3
(v.) The North-western system—		
(*a*) Main line. Rockbank-Serviceton	266	5 3
(*b*) Branch lines	210	5 3
(vi.) The Western and South-western system—		
(*a*) Main line. Werribee-Portland	272	5 3
(*b*) Branch lines	30	2 6
	262	5 3
(vii.) The Suburban system— Including the lines to Aspendale, Dandenong, Bayswater, Croydon, Eltham, Craigieburn, Digger's Rest, Rockbank, and Werribee	188	5 3
Total	3,491	...

Particulars.	Length.	Gauge. ft.	in.
3. QUEENSLAND.	Miles.		
(i.) The Southern division—			
(*a*) The Southern line. Brisbane-Wallangarra ...	286¾	3	6
(*b*) The Western line. Gowrie Junction-Cunnamulla ...	495	3	6
(*c*) The Nth.-coast line. Northgate Junction-235 mls. 14 chs.	229	3	6
(*d*) The South-coast line. Yeerongpilly-Tweed Heads ...	69	3	6
(*e*) Suburban lines	76	3	6
(*f*) Branch lines	608	3	6
(ii.) The Central division—			
(*a*) The Coast line. 235 miles 14 chains-Rockhampton ...	196	3	6
(*b*) The Central line. Archer Park-Longreach ...	440	3	6
(*c*) Branch lines	236½	3	6
(iii.) The Northern division—			
(*a*) Mackay line	42	3	6
(*b*) Bowen line	48	3	6
(*c*) The Great Nthn. Rlwy. Townsville-Winton branches	691½	3	6
(*d*) Cairns line	79	3	6
(*e*) Cooktown line	68	3	6
(*f*) Normanton line	96	3	6
Total	3,660¾	...	
4. SOUTH AUSTRALIA.			
(i.) The Midland system—			
(*a*) Main line. Adelaide-Terowie	140	5	3
(*b*) Branch lines	125½	5	3
(ii.) The Northern system—			
(*a*) Terowie-Oodnadatta	548	3	6
(*b*) Other lines	455	3	6
	5	5	3
(iii.) The Southern system—			
(*a*) Main line. Adelaide to Serviceton	194½	5	3
(*b*) Branch lines	158¾	5	3
(iv.) The South-eastern system—			
(*a*) Wolseley-Mount Gambier	112	3	6
(*b*) Branch lines	113	3	6
(v.) Port Broughton line	10	3	6
(vi.) The Western system—			
Port Lincoln-Yeelanna	50¾	3	6
Total	1,912¼	...	
6. WESTERN AUSTRALIA.			
(i.) Eastern railway—			
(*a*) Main line. Fremantle-Beverley	111	3	6
(*b*) Branch lines	123	3	6
(ii.) Eastern Goldfields railway—			
(*a*) Main line. Northam-Laverton	520	3	6
(*b*) Branch lines	193½	3	6
(iii.) South-western railway—			
(*a*) Main line. Perth-Bunbury	115	3	6
(*b*) Branch lines	337	3	6
(iv.) Great Southern railway—			
(*a*) Beverley-Albany Jetty	243	3	6
(*b*) Branch lines	113	3	6
(v.) Northern railway—			
(*a*) Main line. Geraldton-Nannine	310	3	6
(*b*) Branch lines	45	3	6
(vi.) Hopetoun-Ravensthorpe railway	34	3	6
Total	2,144½	...	

Particulars.	Length.	Gauge.
5. NORTHERN TERRITORY.	Miles.	ft. in.
Palmerstone-Pine Creek	145½	3 6
7. TASMANIA.		
(i.) Main line. Hobart-Evandale Junction	122¾	3 6
(ii.) Derwent Valley line. Bridgewater-Glenora	30¾	3 6
(iii.) Apsley line. Brighton Junction-Apsley	26	3 6
(iv.) Parattah-Oatlands line	4½	3 6
(v.) Fingal line. St. Mary's-Conara	46¾	3 6
(vi.) Western line. Launceston-Burnie	111½	3 6
(vii.) Chudleigh line	12½	3 6
(viii.) Scottsdale line. Launceston-Scottsdale	47½	3 6
(ix.) Sorell-Bellerive line	14½	3 6
(x.) Zeehan line. Regatta Point-Zeehan	29½	3 6
(xi.) North-east Dundas tramway. Zeehan-Williamsford ...	19	2 0
(xii.) Comstock tramway	4¼	2 0
Total	469½	...
Grand total of Government railways in the Commonwealth ...	15,466½	...

7. **Administration and Control of Government Railways.**—In each State of the Commonwealth the policy has now been established that the railways should be kept under the control of the Government. This policy, as has been shewn, was early actualised in Australia, and, excepting in cases presenting unusual circumstances, may be regarded as the settled policy of the country. It may here be observed that for many years past nationalisation of railways throughout Europe has been a feature of the development of railway policy, and so far there is no sign of any movement in an opposite direction. Indeed it may be said that the Governments have recognised the supreme importance of a railroad policy, not only as an element in the industrial, but even in the political life of nations, and have felt that nothing short of complete ownership and direct management of the railroads would give them the power which, for national reasons, they must exert. In America the modern tendency is to so condition the freights by Governmental action as to give at least a quasi-national character to the railways.

(i.) *New South Wales.* Prior to the year 1888 the control of the State railways in New South Wales was vested in the Minister for Works, under the provisions of the Railways Act of 1858, the actual management being in the hands of a Commissioner. In 1888, however, the Act referred to was repealed by a new Act, the object of which was to improve the administration and to free it from political influences. Under this Act, as amended in 1901, three Commissioners were appointed for a period of seven years, but in 1906 an amending Act was passed, which provides for the appointment of a Chief Commissioner, with supreme power, an Assistant Commissioner for Railways, and an Assistant Commissioner for Tramways. The Chief Commissioner is required to present an annual report to Parliament, through the Minister for Railways, setting forth an account of his proceedings, and of the revenue and expenditure during the previous year. New lines are constructed by the Railway and Tramway Construction Branch of the Public Works Department, and on completion are handed over to the control of the Chief Commissioner.

(ii.) *Victoria.* In consequence of general dissatisfaction in regard to the management of the railways by political heads, a new Railway Act was passed and came into

force on the 1st November, 1883. Under its provisions the management and control of the State railways were placed in the hands of three Commissioners, who supervised the construction of new lines as well as the general management of lines already open for traffic. On the 1st January, 1892, the duty of the construction of new lines was transferred to the Board of Land and Works, and the Minister, under the provisions of the Railways Act of 1891, was given greater powers to interfere in matters of policy. In 1895 the Government appointed a Board to inquire into and report upon the general working of the Railway Department, and as a result of their report the Railways Act of 1896 was passed. The management was placed in the hands of one Commissioner until the year 1903, when the Victorian Railway Commissioners Act was passed, and the administration was again placed in the hands of three Commissioners.

Proposals for the construction of new lines are in every case, in which the estimated cost is in excess of £20,000, investigated by the Parliamentary Standing Committee on Railways, whose recommendation is submitted to the Legislature. Any new line authorised by Parliament is constructed under the supervision of the Chief Engineer for Railway Construction, who is responsible to the Minister of Railways for the time being, and is not subject to the control of the Commissioners. New lines are constructed under the authority of the Railway Lands Acquisition Acts 1893 to 1899.

(iii.) *Queensland.* The first Act referring to the construction of railways, passed by the Queensland Legislature in 1863, provided for the appointment of a Commissioner of Railways, who was to be the permanent head of the Railway Department, but was, however, also to be subordinate, as regards all matters of administration, to the Minister in charge of the railways for the time being. This arrangement was continued until the year 1888, when an Act was passed providing for the appointment of three Commissioners invested with full powers as to the administration, management, and construction of the railways, the control of which was thus removed from political influence. The functions of a Minister for Railways were not abolished, but they were so defined and limited that the Minister became in effect an intermediary between the Commissioners and Parliament, to which body the Commissioners were bound to make an annual report, setting forth an account of their proceedings and a financial statement for the previous year. The Railways Act Amendment Act of 1896 again provided for the appointment of one Commissioner only, for a term not exceeding three years, extended in 1902 to a maximum term of seven years. Under the Act of 1896 the Commissioner is required to prepare an annual report of the Railway Department. New lines are constructed by the Commissioner under the Railways Act of 1906. Under this Act the ratepayers in any district in which a new line is constructed are liable for the amount of any deficiency in case the earnings in any year are less than the working expenses, together with interest at the rate of 3 per cent. on the cost of construction. The separation from each other by long distances of some of the railway lines in Queensland puts difficulties in the way of their economical administration and supervision, since it is found necessary to maintain, in connection with each of the principal detached lines, a separate staff of engineering and managing officials.

(iv.) *South Australia.* The Railway Clauses Consolidation Act, passed in South Australia in March, 1847, was the first Act passed in Australia referring to the construction of railways; its provisions, however, contained many obsolete clauses of English railway legislation, and were soon modified. In 1887 an Act to make better provision for the construction, maintenance, and management of railways was passed, and came into force on the 1st June, 1888; it removed the control of the railways from political influence and provided for the appointment of three Commissioners, into whose hands the management and the supervision of the railways passed. The Act of 1887 was, however, amended by the Railway Commissioners Act of 1894, which provides for one Commissioner only, assisted by a Board of Advice. Under the Act of 1894 the Commissioner has the same

powers as were vested in the three Commissioners under the Act of 1887. Further amendments were made in the years 1902 and 1906, but since the Act of 1894 was passed the management, maintenance, and construction of the railways have remained in the hands of one Commissioner, who is required to present to Parliament an annual report of his proceedings, and of the revenue and expenditure during the previous year.

(v.) *Western Australia.* From the time of the inception of railways in this State until the granting of responsible government in 1890, the construction, maintenance, and control of all railways were in the hands of an official holding the title of Commissioner of Railways, and having a seat in the Executive Council. This official was invested with very extensive powers for all purposes connected with railways, and had also to supervise the safe working and the charges made by private railway owners. On the institution of responsible government the office of Commissioner was converted into a Ministerial one; the active management was placed in the hands of an officer styled General Manager of Railways, while construction works on new lines were carried out by the Department of Public Works. In 1902 a Bill was introduced into Parliament providing for the appointment for a term of five years of a Railway Commissioner to be free from political influence. This Bill received the Vice-regal assent on the 20th December, 1902. The former Railway Acts, of which the Act in question was an amendment, continued to remain in force, with the result that certain anomalies and ambiguities arose, in consequence of which a Consolidating Government Railways Act was passed in 1904. Under its provisions the administration of all Government railways was placed in the hands of the Commissioner, who was relieved from the supervision of private railways. The construction of new railways or of extensions is left, as formerly, in the hands of the Minister controlling the Department of Public Works. The Act of 1904 was amended in certain details in 1907.

(vi.) *Tasmania.* The law relating to the control and management of the Tasmanian Government railways was amended and consolidated by the Railway Management Act of 1891, which has in turn been amended by Acts passed in 1893, 1896, and 1901. The control and construction of Government railways are vested in a responsible Minister, the active management and maintenance being in the hands of an officer styled the General Manager, who is subject to such directions as he may receive from the Minister. A Bill to amend the Railway Management Act 1891 has been introduced in Parliament; it provides for the appointment of a Railway Commissioner to hold office for four years.

8. **Lines under Construction, and Authorised and Proposed Lines, 1910.**—The following statement gives particulars up to the 30th June, 1910, of the mileage of Government railways (*a*) under construction, and (*b*) authorised for construction but not commenced:—

MILEAGE UNDER CONSTRUCTION AND AUTHORISED, 30th JUNE, 1910.

Particulars.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Cwlth.
Mileage under construction ...	253½	114	345	29	281	24	1,046½
Mileage authorised	311	213¼	148	286	182	...	1,140¼

(i.) *Lines under Construction.* In spite of the great extension of State railways which has taken place since the year 1875 throughout the Commonwealth, there are still, in some of the States, tracts of country of immense area, which are as yet practically undeveloped, and in which little in the nature of permanent settlement has been accomplished; the general policy in the States is to extend the existing lines inland, in the form of light railways, as settlement increases, and although it is true that lines which

were not likely to be commercially successful in the immediate future have been constructed from time to time, for the purpose of encouraging settlement, the general principle that the railways should be self-supporting is kept in view. (*a*) In *New South Wales* the lines under construction are chiefly of the "pioneer" class, and are made with a view to affording railway communication over level country to districts in which the traffic would not warrant the expenditure necessary to provide thoroughly equipped lines. As the traffic increases the permanent way is strengthened in order to allow the heavy types of engines to run over it. It is probable that railway extension in New South Wales, in the near future, will be mainly confined to lines of the "pioneer" class. Two of the most important lines now under construction are those from Maitland to Dungog, a distance of 32¾ miles, Dungog to Gloucester, 38¾ miles, and from Gloucester to Taree, a distance of 44 miles. The extension of these lines as far as Grafton, a further distance of 195 miles, has been authorised, and, when completed, will form part of an alternative main route between Newcastle and Brisbane. Other lines under construction are as follow:—Lockhart to Clear Hills (53 miles), Cowra to Canowindra (24½ miles), Narromine to Peak Hill (36 miles), and Cooma to Nimitybelle (24½ miles). (*b*) *Victoria.* In this State the following lines were under construction by the Board of Land and Works on the 30th June, 1910:—*5 ft. 3 in. gauge:* Mildura to White Cliffs (7 miles), Ouyen to Cow Plains (57 miles), and Beeac to Newtown (35¾ miles), making in all 99¾ miles. *2 ft. 6 in. gauge:* Beech Forest to Crow's (14¼ miles). (*c*) *Queensland.* At the end of the year 1909-10, fourteen railways, having a total length of 345 miles, were under construction, viz.:—Kannangur to Blackbutt (28 miles), Boyne Valley branch (53 miles), Atherton to Evelyn (31 miles), Kingsthorpe towards Main Range (21 miles), Dalby to Tara (52 miles), Yungaburra to Johnstone River (9 miles), Friezland to Mount Elliot (18 miles), Talwood to Bullamon (39 miles), Pittsworth to Millmerran (27 miles), Warwick to Meryvale (19 miles), Laidley Creek branch (7 miles), Port Alma branch (17 miles), Cattle Creek branch extension (8 miles), and Kingaroy to Nanango (16 miles). (*d*) *South Australia.* In this State the lines under construction on the 30th June, 1910, were as follows:—Gawler to Angaston (24 miles), Gawler to Angaston Extension (2½ miles), and Port Adelaide to Largs (2½ miles),—all on the 5 ft. 3 in. gauge. (*e*) In *Western Australia* the following lines were in course of construction by the Public Works Department on the 30th June, 1910:—Mt. Magnet to Black Range (93 miles), Nannine to Meekatharra (24 miles), Marrinup extension (2 miles), Port Hedland to Marble Bar (114 miles), Upper Chapman (26 miles), and Bridgetown to Wilgarup (22 miles). (*f*) *Tasmania.* At the end of the year 1909-10, one line, viz., Scottsdale to Branxholm, 24 miles in length, was in course of construction.

(ii.) *Lines Authorised for Construction.* (*a*) In *New South Wales*, in addition to the North-coast railway extension from Taree to Grafton, a distance of 195 miles, the construction of lines from Nimitybelle to Bombala (40 miles) and from Moree to Mungindi (76 miles) had been authorised up to the 30th June, 1910. (*b*) In *Victoria* the following lines were authorised, but their construction had not been commenced up to the end of June, 1910:—*5 ft. 3 in. gauge*, Eltham to Hurst's Bridge (6¾ miles), Gheringhap to Maroona (100¾ miles), Noradjuha to Toolondo (11¼ miles), Bairnsdale to Orbost (60 miles), and Jeparit to Lorquon (14½ miles); *2 ft. 6 in. gauge*, Whitfield to Tolmie (20 miles). (*c*) *Queensland.* In addition to the new lines upon which work has been commenced, lines from Mount Morgan to the Dawson River (69 miles), Oakey to Cooyar (38 miles), Rosewood to Marburg (9 miles), Cordalba to Dallornil (31 miles), and McGregor Creek branch extension (1 mile), have been approved of by Parliament. (*d*) In *South Australia* the construction of a line from Tailem Bend to Brown's Well (100 miles) on the 5 ft. 3 in. gauge, and of lines from Yeelanna to Mannipa Hill (108 miles), and Cummins to Darke's Peak (78 miles) on the 3 ft. 6 in. gauge, was authorised during the year 1909-10. It is proposed to electrify the Adelaide-Glenelg (6½ miles) line at an estimated cost of £115,000, and also to construct light lines in newly settled districts to be run by District Councils. (*e*) In *Western Australia* three lines having a total length of 182 miles were authorised for construction up to the 30th June, 1910. These

lines were—Dowerin to Merredin (97 miles), Goomalling to Wongan Hills (33 miles), and Boyup to Kojonup (52 miles).

(iii.) *Proposed Transcontinental Lines.* (*a*) *Port Augusta to Kalgoorlie Line.* A proposal which has recently received considerable attention is to connect the railways of the eastern and southern districts of Australia with the Western Australian lines by the construction of a line between Port Augusta, in South Australia, and Kalgoorlie, on the Western Australian goldfields, a distance of 1100 miles. The Transcontinental Railway Bill, passed in 1907 by the Federal Houses of Parliament, provided for the expenditure of a sum of £20,000 for a preliminary survey of the proposed line. This survey was commenced in 1908, and was completed in March, 1909. The route of the preliminary survey may be seen on reference to the map on page 741 hereof; the route *via* Tarcoola was, for several reasons, chosen in preference to that *via* Gawler Range and Fowler's Bay. It is stated in the report of the surveyors that while some part of the country which it is proposed to traverse is impossible for settlement, there is an area of good country, extending to about 40,000 square miles, which can be considered favourable for pastoral development. The estimated cost of construction and equipment of the line on the basis of a 4 ft. 8½ in. gauge is £3,988,000. It is claimed that the line would be of immense benefit in the expedition of the European mails to the southern and eastern parts of the continent, and, if occasion should arise, in facilitating the transport of troops. It is intended to introduce a Bill in the Commonwealth Parliament at an early date to authorise the construction of a line from Port Augusta to Kalgoorlie. A consulting engineer has been appointed by the Department of Home Affairs to prepare working plans and specifications, calculate quantities, and collate all other information necessary, in order that construction may be commenced as soon as parliamentary sanction to the project has been obtained. (*b*) *Northern Territory Transcontinental Line.* Another proposal is to extend the main northern line from Adelaide, which at present terminates at Oodnadatta, as far as Pine Creek, the southern terminus of the Northern Territory line from Palmerston. The distance between Oodnadatta and Pine Creek by the route followed by the telegraph wire is 1140 miles, and it is claimed that, if a railway line were constructed between these two places, it would be practicable for passengers and mails to reach London from Adelaide in seventeen days, *via* Port Darwin and the trans-Siberian railway. In the course of the year 1896 offers were made on behalf of various syndicates to construct this line, but the Government was not at that time prepared to recommend the acceptance of any offer based upon the land grant or guarantee system. In 1902, however, the Transcontinental Railway Act was passed, and the Government invited tenders for the construction of 1063 miles of 3 ft. 6 in. line on the land grant system, to be built at the rate of at least 100 miles in any one year, the grant of land offered amounting to nearly 80,000,000 acres. No tenders were accepted and subsequent offers have been refused. The country through which this line would pass presents no great engineering difficulties; for the most part it is one vast plain, with an occasional sand ridge or a watercourse. The construction of this line is provided for in the Northern Territory Acceptance Act 1910. (See pages 22 and 23 hereinbefore.) Under that Act the property in the railways from Port Augusta to Oodnadatta and from Palmerston to Pine Creek has been transferred to the Commonwealth Government as from the 1st January, 1911. In the meantime these lines are being worked under the control of the South Australian Railway Commissioner by agreement between the Commonwealth and South Australian Governments.

9. **Cost of Construction and Equipment of Government Railways.**—The total cost of construction and equipment of the State railways of the Commonwealth at the 30th June, 1910, amounted to £146,882,474, or to an average of £9497 per mile open for

traffic. Particulars as to the capital expenditure incurred in each State are given in the following table :—

GOVERNMENT RAILWAYS.—COST OF CONSTRUCTION AND EQUIPMENT TO THE 30th JUNE, 1910.

State.	Length of Line Open.	Total Cost of Construction and Equipment.	Average Cost per Mile Open.	Cost per Head of Population.
	Miles.	£	£	£
New South Wales	3,643	48,925,348	13,430	29.77
Victoria	3,490¾	43,142,329	12,358	32.97
Queensland	3,660¾	24,336,372	6,647	41.28
South Australia	1,912¼	13,879,523	7,258	33.49
Northern Territory	145½	1,173,224	8,063	391.07
Western Australia	2,144½	11,377,262	5,304	40.73
Tasmania	469½	4,048,416	8,632	22.08
Commonwealth	15,466¼	146,882,474	9,497	33.21

It will be seen that the lowest average cost per mile open is in Western Australia, and is only £5304, which is less than one-half of the highest average cost, namely, £13,430 in New South Wales, compared with an average of £9497 for the whole Commonwealth. In Western Australia there have been comparatively few engineering difficulties to contend with, and also the system has been adopted in that State of giving contractors the right to carry traffic during the period of their contracts, with the result that, at all events in all goldfields railway contracts, the cost of construction has been considerably lessened.

(i.) *Reduction of Cost per Mile in Recent Years.* The average cost per mile of the lines constructed lately in the Commonwealth is very much less than the figure given in the above table, in consequence of the construction of light "pioneer" lines, which have already been referred to, and which it was originally considered in New South Wales could be laid down at a cost of £1750 per mile (exclusive of stations and bridges). It should also be remembered that in the early days of railway construction there were considerable engineering difficulties to overcome, and that labour was scarce and dear. Since 1891 over one thousand miles of the "pioneer" lines have been opened in New South Wales, the average cost ranging from about £2000 to £7500 per mile, according to the difficulties met in the country traversed. The lowest cost per mile for any line previously constructed had been that of the line from Nyngan to Cobar, the average cost of which, to the end of June, 1910, was £3759. In Victoria also the cost of construction has been greatly reduced in recent years. The total cost to the 30th June, 1910, of the narrow gauge (2 ft. 6 in.) lines, having a length of one hundred and seven miles, was only £270,902, which gives an average cost per mile of only £2532. In the other States also the cost of construction per mile has been reduced by building light railways as cheaply as possible. Fairly substantial permanent way is laid down with reduced ballast, and, as settlement progresses and traffic increases, the road is strengthened and the stations and siding accommodation enlarged. The subjoined table gives examples of some of the more expensive lines, most of which were built in the early days :—

GOVERNMENT RAILWAYS.—EXAMPLES OF LINES CONSTRUCTED AT LARGE CAPITAL EXPENDITURE PER MILE OPEN.

Line.	Gauge.		Length.	Total Cost.	Average Cost per Mile.	Date of Opening.
	ft.	in.	Miles.	£	£	
NEW SOUTH WALES—						
Penrith to Bathurst	4	8½	112⅓	2,998,939	26,743	1876
Sydney to Kiama	4	8½	72¼	2,030,442	27,959	1887
Homebush to Waratah ...	4	8½	96⅓	3,116,914	32,291	1887
VICTORIA—						
Melbourne to Bendigo ...	5	3	101	4,849,548	48,068	1862
North Geelong to Ballarat ...	5	3	53¼	1,907,387	35,846	1862

The next table gives instances of lines which have been constructed in more recent years at a comparatively small cost per mile.

The average cost per mile of the 435⅜ miles comprised in the above table was £34,221, whereas the average cost of the 547⅓ miles referred to in the next table was £1816.

GOVERNMENT RAILWAYS.—EXAMPLES OF LINES CONSTRUCTED AT SMALL CAPITAL EXPENDITURE PER MILE OPEN.

Line.	Gauge.		Length.	Total Cost.	Average Cost per Mile.	Date of Opening.
	ft.	in.	Miles.	£	£	
NEW SOUTH WALES—						
Parkes to Condobolin	4	8½	62¾	130,587	2,079	1898
Dubbo to Coonamble	4	8½	95⅞	236,772	2,463	1903
VICTORIA—						
Wangaratta to Whitfield ...	2	6	30½	39,228	1,287	1899
Birchip to Cronomby	5	3	26⅛	40,946	1,548	1899
Rupanyup to Marnoo	5	3	15⅛	27,481	1,787	1909
QUEENSLAND—						
Dalby to Bell	3	6	23½	31,799	1,353	1906
Jericho to Blackall	3	6	71¼	139,539	1,960	1908
SOUTH AUSTRALIA—						
Port Lincoln to Cummins ...	3	6	42	83,964	2,004	1907
Tailem Bend to Pinnaroo ...	5	3	86⅓	127,264	1,470	1906
WESTERN AUSTRALIA—						
Goomalling to Dowerin ...	3	6	15⅓	17,726	1,171	1906
Coolgardie to Widgiemooltha ...	3	6	51½	78,433	1,527	1908
Narrogin to Wickepin ...	3	6	26½	39,983	1,515	1909

The comparisons afforded in the two preceding tables are subject to certain limitations, inasmuch as the figures in each case represent the total cost to date, and the cost is naturally greater in the case of the older lines. Further, the figures given represent the cost of construction only (i.e., are exclusive of cost of equipment), and cannot therefore be directly compared with the average cost per mile open given in the preceding table.

(ii.) *Adoption of Special Means of Locomotion.* The Railway Commissioner of South Australia has given orders for the construction of a truck to be run on one rail. The experiment is to be made with a view to the solution of the problem of how to get produce to stations in the Pinnaroo district. The propelling force of the engine to be used will be petrol. If the test prove a success, the Government intends to construct small lines as feeders to the Pinnaroo railway and thus convey produce over the sand hills cheaply.

A Renard road train (consisting of one motor and four vehicles) has recently been equipped for use in connection with the Queensland Government railways. The train

is to be used between Inglewood and the Texas district, and arrangements are now being made with the local authorities for the improvement of a few difficult portions of the road.

(iii.) *Capital Cost of Construction and Equipment, Total and per Mile Open, 1901 to 1910.* The increase in the total capital cost of construction and equipment of Government railways in each State and in the Commonwealth on the 30th June in each year from 1901 to 1910 inclusive is shewn in the following table:—

GOVERNMENT RAILWAYS.—CAPITAL COST OF CONSTRUCTION AND EQUIPMENT, 1901 to 1910.

Year.	N.S.W.	Victoria.	Q'land.	S'th. Aust.	N. Ter.	West. Aust.	Tas.	C'wealth.
				TOTAL COST (,000 OMITTED).				
	£	£	£	£	£	£	£	£
1901 ...	38,933	40,145	19,740	12,707	1,165	7,098	3,799[1]	123,587
1902 ...	40,565	40,614	20,119	12,826	1,155	7,410	3,841[1]	126,530
1903 ...	41,655	40,974	20,302	12,952	1,169	8,142	3,884[1]	129,078
1904 ...	42,289	41,217	20,888	13,068	1,175	8,956	3,901	131,494
1905 ...	43,063	41,279	21,611	13,138	1,173	9,808	3,921	133,993
1906 ...	43,626	41,398	21,741	13,141	1,173	9,966	3,927	134,972
1907 ...	44,700	41,533	21,839	13,254	1,173	10,301	3,944	136,744
1908 ...	45,683	41,929	22,576	13,439	1,173	10,733	3,978	139,511
1909 ...	47,613	42,486	23,395	13,687	1,173	11,017	4,004	143,375
1910 ...	48,925	43,142	24,336	13,880	1,173	11,377	4,049	146,882
				COST PER MILE OPEN.				
	£	£	£	£	£	£	£	£
1901 ...	13,690	12,402	7,047	7,320	8,007	5,239	8,304[1]	9,861
1902 ...	13,405	12,300	7,183	7,388	7,940	5,449	8,317[1]	9,895
1903 ...	13,270	12,112	7,489	7,460	8,038	5,371	8,411[1]	9,893
1904 ...	12,889	12,191	7,134	7,528	8,076	5,812	8,449	9,792
1905 ...	13,125	12,162	6,989	7,526	8,066	6,111	8,476	9,795
1906 ...	12,869	12,197	6,931	7,528	8,066	6,132	8,490	9,754
1907 ...	12,945	12,235	6,962	7,235	8,065	5,840	8,526	9,669
1908 ...	13,156	12,346	6,721	7,151	8,063	5,524	8,590	9,550
1909 ...	13,142	12,459	6,688	7,248	8,063	5,387	8,648	9,512
1910 ...	13,430	12,358	6,647	7,258	8,063	5,304	8,632	9,497

1. To the 31st December, 1901, 1902, and 1903 respectively.

(iv.) *Loan Expenditure on Railways and Tramways, 1901 to 1910.* The subjoined table shews the total loan expenditure on Government railways and tramways (including lines both open and unopen) in each State during each financial year from 1901 to 1908, and on railways only for the years 1908-9 and 1909-10. Figures shewing loan expenditures on railways only are not available for years prior to 1909.

GOVERNMENT RAILWAYS AND TRAMWAYS.—LOAN EXPENDITURE, 1901 to 1910.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	£,000	£,000.	£,000.	£,000.	£,000.	£,000.	£,000.
1901-2	2,244	483	751	122	579	*81	4,260
1902-3	1,684	371	696	144	1,059	*57	4,011
1903-4	806	258	388	120	443	*38	2,053
1904-5	502	172	120	101	348	†19	1,262
1905-6	529	78	158	70	220	6	1,061
1906-7	422	74	555	47	330	15	1,443
1907-8	1,363	250	885	55	306	39	2,898
1908-9‡	1,710	544	1,053	241	538	69	4,155
1909-10‡	2,064	657	1,268	383	529	100	4,996

* For the calendar years 1901, 1902, and 1903 respectively. † For the eighteen months ended 30th June, 1905. ‡ Railways only.

The following statement shews the total loan expenditure to the 30th June, 1910 :—

GOVERNMENT RAILWAYS.—TOTAL LOAN EXPENDITURE IN EACH STATE AND IN THE COMMONWEALTH TO THE 30th JUNE, 1910.

State, etc. ...	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth
	£	£	£	£	£	£	£
Expenditure ...	50,768,421	40,319,109	25,766,403	14.578,841	11,299,053	4,351,776	147,083,603

10. **Gross Revenue, Total, per Average Mile Worked, and per Train-mile Run, 1901 to 1910.**—The following table shews the total revenue from all sources, the revenue per average mile worked, and the revenue per train-mile run in each State during each financial year from 1901 to 1910 inclusive :—

GOVERNMENT RAILWAYS.—GROSS REVENUE, TOTAL, PER AVERAGE MILE WORKED, AND PER TRAIN MILE, 1901 to 1910.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	N. Ter.	W. Aust.	Tas.	C'wealth.
TOTAL GROSS REVENUE (£ ,000 OMITTED).								
	£	£	£	£	£	£	£	£
1900-1	3,574	3,338	1,317	1,236	14	1,353	*206	11,038
1901-2	3,669	3,368	1,382	1,085	13	1,521	*233	11,271
1902-3	3,315	3,047	1,234	1,077	11	1,553	*248	10,485
1903-4	3,436	3,438	1,305	1,161	17	1,588	†248	11,193
1904-5	3,684	3,582	1,413	1,373	16	1,610	244	11,822
1905-6	4,235	3,787	1,546	1,350	15	1,634	241	12,808
1906-7	4,709	4,013	1,830	1,575	14	1,537	258	13,936
1907-8	4,944	3,873	1,951	1,741	14	1,502	278	14,303
1908-9	5,028	4,178	2,103	1,639	13	1,509	280	14,750
1909-10... ...	5,486	4,444	2,338	1,841	12	1,637	284	16,042
GROSS REVENUE PER AVERAGE MILE WORKED.								
	£	£	£	£	£	£	£	£
1900-1	1,268	1,034	470	712	95	999	*447	880
1901-2	1,242	1,031	493	625	86	1,122	*498	886
1902-3	1,078	914	444	620	78	1,083	*528	808
1903-4	1,066	1,020	462	668	117	1,035	†529	841
1904-5	1,123	1,059	461	730	106	1,027	518	866
1905-6	1,258	1,116	497	773	102	1,017	513	926
1906-7	1,374	1,182	583	868	96	917	549	991
1907-8	1,425	1,141	602	936	99	821	590	993
1908-9	1,412	1,230	611	868	90	765	596	992
1909-10... ...	1,513	1,291	662	972	84	779	599	1,054
GROSS REVENUE PER TRAIN-MILE RUN.								
	d.	d.	d.	d.	d.	d.	d.	d.
1900-1	79.69	72.39	54.35	67.56	109.75	78.74	*55.14	71.43
1901-2	75.58	71.62	58.55	62.07	99.27	81.00	*61.99	70.74
1902-3	68.89	71.09	59.87	68.53	89.13	80.85	*63.80	69.66
1903-4	79.30	89.96	67.43	74.50	129.38	82.96	†62.79	80.12
1904-5	84.46	95.28	68.98	80.99	120.61	90.18	61.80	84.84
1905-6	85.67	96.79	70.26	83.59	117.37	89.98	61.19	85.99
1906-7	87.28	95.96	71.68	87.23	108.87	88.25	63.15	86.57
1907-8	83.26	89.53	71.40	83.41	111.94	90.93	64.81	83.27
1908-9	80.06	88.81	68.29	79.87	100.85	88.25	65.31	80.74
1909-10... ...	85.12	91.11	68.80	81.49	97.05	89.35	64.33	83.26

* For the financial years 1901, 1902, and 1903 respectively. † For twelve months ended the 30th June, 1904.

11. **Coaching, Goods, and Miscellaneous Receipts, 1901 to 1910.**—The gross revenue is composed of (*a*) receipts from coaching traffic, including the carriage of mails, horses, parcels, etc., by passenger trains; (*b*) receipts from the carriage of goods and live stock, and (*c*) rents and miscellaneous items. The subjoined table shews the gross revenue, during the years 1901 to 1910 inclusive, classified according to the three chief sources of receipts. The total of the three items specified has already been given in the preceding paragraph hereof.

COACHING, GOODS, AND MISCELLANEOUS RECEIPTS, 1901 to 1910.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.*	C'wealth.
			COACHING TRAFFIC RECEIPTS (£ ,000 OMITTED).				
	£	£	£	£	£	£	£
1900-1 ...	1,336	1,561	446	363	383	99	4,188
1901-2 ...	1,368	1,580	435	373	443	110	4,309
1902-3 ...	1,371	1,525	430	345	450	116	4,237
1903-4 ...	1,405	1,562	456	371	485	†119	4,398
1904-5 ...	1,428	1,598	478	383	503	118	4,508
1905-6 ...	1,563	1,720	529	405	507	121	4,845
1906-7 ...	1,736	1,863	614	455	497	129	5,294
1907-8 ...	1,850	1,936	672	515	483	137	5,593
1908-9 ...	2,008	2,041	730	533	489	138	5,939
1909-10 ...	2,124	2,143	816	586	507	139	6,315
			GOODS AND LIVE STOCK TRAFFIC RECEIPTS (£ ,000 OMITTED).				
1900-1 ...	2,203	1,712	772	852	870	99	6,508
1901-2 ...	2,264	1,720	862	689	1,037	116	6,688
1902-3 ...	1,908	1,455	767	710	1,047	121	6,008
1903-4 ...	1,990	1,793	810	773	1,067	†120	6,553
1904-5 ...	2,213	1,919	900	870	1,061	117	7,080
1905-6 ...	2,628	2,001	983	920	1,081	111	7,724
1906-7 ...	2,923	2,081	1,181	1,092	992	120	8,389
1907-8 ...	3,043	1,868	1,251	1,193	974	132	8,461
1908-9 ...	2,965	2,067	1,347	1,067	974	134	8,554
1909-10 ...	3,291	2,222	1,500	1,215	1,066	134	9,428
			MISCELLANEOUS RECEIPTS £ ,000 OMITTED).				
1900-1 ...	34	65	99	36	100	8	342
1901-2 ...	37	68	84	36	42	7	274
1902-3 ...	36	67	37	33	57	10	240
1903-4 ...	41	83	39	34	37	†9	243
1904-5 ...	43	65	35	37	46	8	234
1905-6 ...	43	67	34	40	46	9	239
1906-7 ...	50	69	35	42	48	9	253
1907-8 ...	51	70	28	47	45	9	250
1908-9 ...	56	70	26	52	45	8	257
1909-10 ...	71	79	22	52	64	11	299

* Tasmanian figures for 1901, 1902, and 1903 are for years ended the 31st December.
† For twelve months ended the 30th June, 1904.

(i.) *New South Wales.* In New South Wales, owing, no doubt, to the reductions made in rates and fares in recent years, and to the general prosperity of the State, the traffic receipts continue to shew substantial development, the total earnings for the past year having amounted to £5,485,715, an increase over the previous year of £457,265. The increases occurred in all branches of passenger and goods traffic, except in coal, coke, and other minerals.

(ii.) *Victoria.* In Victoria each sub-division of traffic shewed an increase over the figures for the previous year and was also higher (with the exception of live-stock) than in any previous year. The most notable increases were in goods and minerals (£148,895, or 8.2 per cent.), and passengers (£86,694, or 4.8 per cent.).

(iii.) *Queensland.* In Queensland the increase in 1909-10 in gross earnings, £235,349 above 1908-9, is to some extent accounted for by the opening of new lines, but it is stated that the expansion of traffic upon the older established lines has been enormous. The chief increases in earnings were in respect of passengers (£68,955 or 12.01 per cent.), general merchandise (£66,741 or 9.72 per cent.), live stock (£43,600 or 27.71 per cent.), and wool (£37,449 or 21.16 per cent).

(iv.) *South Australia.* In this State the increase for the last year in coaching traffic receipts amounted to £52,801; there were also considerable increases in respect of minerals (£98,816) and wheat (£14,222). There was, however, a decrease in respect of live stock amounting to £22,631.

(v.) *Western Australia.* In this State the earnings in 1909-10 shewed an increase, as compared with 1908-9, in every branch of traffic and are the highest on record. What may be regarded as personal traffic rendered an additional amount of over £20,000, giving evidence of increased activity in business and pleasure, while goods and live stock returned £97,000 more than the previous year. Miscellaneous receipts were £17,000 higher, the most notable increases being in the terminal charges in connection with placing the increased quantities of wheat and timber alongside shipping for export.

(vi.) *Tasmania.* The gross revenue in 1909-10 was the largest yet recorded. As compared with 1908-9, the increase from passenger traffic was £1658; live stock, £1005; rents and miscellaneous, £1964; whilst there was a decrease in goods and mineral traffic of £699.

The following table shews for the year 1909-10 the percentage which each class of receipts bears to the total gross revenue:—

PERCENTAGE OF REVENUES FROM VARIOUS SOURCES ON TOTAL REVENUE, 1909-10.

Particulars.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	Cwlth.
	%	%	%	%	%	%	%
Coaching traffic receipts ...	38.72	48.21	34.88	31.62	31.00	49.05	39.37
Goods and live stock traffic receipts	59.99	50.01	64.15	65.58	65.07	47.28	58.77
Miscellaneous receipts	1.29	1.78	0.97	2.80	3.93	3.67	1.86

12. **Coaching Traffic Receipts per Average Mile Worked, per Passenger-train Mile, and per Passenger Journey.**—The subjoined table shews the receipts from coaching traffic per average mile of line worked, per passenger-train mile, and per passenger journey in each State and in the Commonwealth for the year ended the 30th June, 1910:—

GOVERNMENT RAILWAYS.—COACHING TRAFFIC RECEIPTS PER MILE OPEN, PER PASSENGER-TRAIN MILE, AND PER PASSENGER JOURNEY, 1910.

State.	Number of Passenger-Train Miles.	Number of Passenger Journeys.	Coaching Traffic Receipts.		
			Gross.	Per Passenger-Train Mile.	Per Passenger Journey.
	No. ,000.	No. ,000	£ ,000.	d.	d.
New South Wales	7,270	53,644	2,124	70.13	9.50
Victoria	6,437 *	85,280	2,143	79.88	6.03
Queensland	2,521	13,259	816	77.65	14.77
South Australia	2,117	15,282	582	66.01	9.14
Northern Territory ...	10	3	4	87.56	311.33
Western Australia	2,117 †	13,171	507	57.52	9.25
Tasmania	375 ‡	1,651	139	89.07	20.26
Commonwealth ...	20,847	182,290	6,315	72.70	8.31

* The returns include 2,514,406 mixed-train mileage, which has been divided between passenger-train miles and goods-train miles in the proportion of one-third and two-thirds respectively. † The returns include 962,093 mixed-train mileage, which has been divided as just stated. ‡ The returns include 702,300 mixed-train mileage, which has been divided as just stated.

The above table shews that, in the several States, there is a considerable difference in the amount of the average receipts per passenger journey. Disregarding the Northern Territory, this amount ranges from 6.03 pence in Victoria, where there is a large metropolitan suburban traffic, to 20.26 pence in Tasmania. The difference in these amounts cannot be accounted for by the amounts of rates charged, which are fairly uniform in the several States (see paragraph 20 hereof), but is largely due to the different traffic conditions which prevail on various lines in the Commonwealth (see paragraph 17 hereof). In order to adequately analyse these figures it would be necessary to have particulars regarding the number of passenger-miles, *i.e.*, the total distance travelled by passengers, in each State, which particulars are not generally available (see paragraph 18 hereof).

The preponderance in the number of passenger journeys in Victoria is accounted for, to a great extent, by the large number of metropolitan suburban passengers in that State. Of the total number of passengers carried in Victoria, 78,554,426 were metropolitan suburban passengers, *i.e.*, were carried between stations within twenty miles of Melbourne, while in New South Wales the number of suburban passengers (between stations within thirty-four miles of Sydney and Newcastle, and including Richmond and Branxton lines) was 48,147,012. In Sydney a large proportion of the metropolitan suburban traffic is carried on the electric tramways, the number of passenger journeys during the year 1909-10 being 187,537,000. In Melbourne, on the other hand, the number of passengers carried on the cable tramways systems during the same period was 68,695,853; and on the St. Kilda-Brighton and the North Melbourne tramways was 3,232,220, making a total of 71,928,073, which is not as great as the number carried on the metropolitan suburban railways in Melbourne. This matter is referred to hereinafter. (See paragraph 17.)

13. **Goods and Live-Stock Traffic Receipts per Mile Worked, per Goods-train Mile, and per Ton Carried.**—The following table shews the gross receipts from goods and live-stock traffic per mile worked, per goods-train mile, and per ton carried for the year ended the 30th June, 1910:—

GOVERNMENT RAILWAYS.—GOODS AND LIVE-STOCK TRAFFIC RECEIPTS PER MILE WORKED, PER GOODS-TRAIN MILE, AND PER TON CARRIED, 1910.

State.	Number of Goods-Train Miles.	Goods and Live-Stock Tonnage.	Goods and Live-Stock Traffic Receipts.		
			Gross.	Per Goods-Train Mile.	Per Ton Carried.
	No. ,000.	Tons ,000.	£ ,000.	d.	d.
New South Wales	8,198	8,393	3,291	96.34	94.10
Victoria	5,269*	4,468	2,222	101.24	119.36
Queensland	5,636	2,656§	1,500	63.88	135.55
South Australia	3,304	2,481	1,208	87.78	116.91
Northern Territory	20	2	7	78.85	740.89
Western Australia	2,281†	2,242	1,066	112.11	114.05
Tasmania	684‡	423§	134	47.10	76.23
Commonwealth	25,392	20,665	9,428	89.11	109.49

* The returns include 2,514,406 mixed-train mileage, which has been divided between passenger-train miles and goods-train miles in the proportion of one-third and two-thirds respectively. † The returns include 962,093 mixed-train mileage, which has been divided as just stated. ‡ The returns include 702,300 mixed-train mileage, which has been divided as just stated. § Exclusive of live-stock tonnage.

From the above table it may be seen that, disregarding the Northern Territory, the average amount of freight paid per ton ranges from 76.23 pence in Tasmania to 135.55 pence in Queensland. The remarks made in the preceding paragraph (12) hereof with

regard to the average fare paid per passenger and to passenger-miles, apply equally to the average amount of freight paid per ton and to ton-miles.

14. **Working Expenses.**—In order to make an adequate comparison of the working expenses of the Government railways in the several States, allowance should be made for the variation of gauges and of physical and traffic conditions, not only on the railways of the different States, but also on different portions of the same system. Where traffic is light, the percentage of working expenses is naturally greater than where traffic is heavy; and this is especially true in Australia, where ton-mile rates are in many cases based on a tapering principle—*i.e.*, a lower rate per ton-mile is charged upon merchandise from remote interior districts—and where on many of the lines there is but little back-loading. Further, though efforts have been made from time to time to obtain a uniform system of accounts in the several States, the annual reports of the Commissioners do not yet comprise fully comparable data of railway expenditure.

The following table shews the total annual expenditure, comprising expenses on (*a*) maintenance of way, works, and buildings; (*b*) locomotive power—repairs and renewals; (*c*) carriages and wagons—repairs and renewals; (*d*) traffic expenses; (*e*) compensation; and (*f*) general and miscellaneous charges; and also the percentage of these expenditures upon the corresponding gross revenues in each State from 1901 to 1910:—

GOVERNMENT RAILWAYS.—TOTAL WORKING EXPENSES AND PERCENTAGES OF WORKING EXPENSES UPON GROSS REVENUES, 1901 to 1910.

Year.	N.S.W.	Victoria.*	Q'land.	S. Aust.	N. Ter.	W. Aust.	Tas.	C'wealth.
TOTAL WORKING EXPENSES (£,000 OMITTED).								
	£	£	£	£	£	£	£	£
1900-1 ...	2,043	2,075	1,058	729	25	1,045	†174	7,149
1901-2 ...	2,267	2,166	993	690	35	1,256	†173	7,580
1902-3 ...	2,266	2,032	863	625	13	1,248	†166	7,213
1903-4 ...	2,259	2,022	812	675	13	1,180	‡166	7,127
1904-5 ...	2,192	2,222	815	737	13	1,256	172	7,407
1905-6 ...	2,309	2,216	863	764	14	1,202	173	7,541
1906-7 ...	2,500	2,353	913	868	13	1,136	185	7,968
1907-8 ...	2,715	2,436	1,054	969	14	1,008	202	8,398
1908-9 ...	2,953	2,515	1,227	940	13	974	204	8,826
1909-10 ...	3,276	2,818	1,414	1,069	13	1,097	212	9,899
PERCENTAGE OF WORKING EXPENSES TO GROSS EARNINGS.								
	%	%	%	%	%	%	%	%
1900-1 ...	57.17	62.17	80.34	58.95	182.59	77.19	†84.26	64.76
1901-2 ...	61.80	64.32	71.83	63.54	276.70	82.58	†74.31	67.25
1902-3 ...	68.37	66.69	69.95	58.01	113.40	80.33	†67.16	68.80
1903-4 ...	65.74	58.82	62.19	58.19	77.73	74.28	‡64.68	63.62
1904-5 ...	59.50	62.04	57.64	57.86	84.70	78.01	70.47	62.65
1905-6 ...	54.51	58.51	55.84	56.63	93.00	73.52	71.56	58.87
1906-7 ...	53.08	58.65	49.88	55.10	94.74	73.89	71.84	57.18
1907-8 ...	54.91	62.89	54.01	55.68	97.22	67.10	72.70	58.71
1908-9 ...	58.72	60.19	58.35	57.39	99.52	64.56	72.89	59.84
1909-10 ...	59.73	63.41	60.48	58.09	101.53	66.99	74.52	61.70

* Including amounts paid for pensions and gratuities, and also special expenditures and charges for belated repairs and in reduction of deficiencies as follows:—For the year 1900-1, £111,943; for 1901-2, £115,244; for 1902-3, £196,137; for 1903-4, £220,092; for 1904-5, £351,141; for 1905-6, £217,179; for 1906-7, £276,630; and for 1907-8, £150,122. † For the calendar years 1901, 1902, and 1903 respectively. ‡ Estimated for a period of twelve months ended the 30th June, 1904.

(i.) *New South Wales.* In this State the total working expenses in 1909-10 amounted to £3,276,409, an increase of £323,585 over the previous year. This increase was mainly owing to the large additional traffic, heavy repairs, special expenditures caused by floods, increased cost of fuel owing to the coal strike, and increased rates of pay to the staff under the awards of Wages Boards.

(ii.) *Victoria.* In Victoria the increase in working expenses, £303,021, was mainly due to the increased cost of coal, to the greater traffic, to reductions in working hours and advances in salaries and wages of the staff, to a larger contribution to the accident

and fire insurance fund, and to the payment of £170,000 into the rolling-stock replacement fund.

(iii.) *Queensland.* In this State the working expenses increased from £1,227,098 (58.35 per cent. on gross earnings) in 1908-9 to £1,414,271 (60.48 per cent.) in 1909-10. It is stated that this increase was expected in view of the renewals necessary upon the older lines, the fact that new railways are being pushed out into districts which are not yet closely settled, and also that the system of fortnightly pay resulted in including more day's wages in the expenditure for 1909-10 than were charged in the previous year.

(iv.) *South Australia.* In South Australia (proper) the working expenses in 1909-10 shewed an increase of £7597, viz., from £114,490 to £122,087. This was to a large extent due to the increased cost of fuel.

(v.) *Western Australia.* The causes of the increased expenditure (£121,600) in 1909-10 as compared with 1908-9, may be briefly stated as follows:—(*a*) Increased salaries, etc., £27,000; (*b*) repairs and renewals of locomotives, £20,000; (*c*) cost of water and fuel, £22,000; (*d*) proportion of cost of fire at workshops, £22,600, and (*e*) renewals of permanent way, £30,000. These items are partly due to increased train mileage.

(vi.) *Tasmania.* The working expenses in 1909-10 were £211,677 as compared with £204,127 in the previous year, being an increase of £7550.

From the preceding table it may also be seen that during the last three financial years there have been for the whole Commonwealth increases in the percentages of working expenses to gross earnings. This increase is partly due to the fact that in four of the States, consequent on the favourable results of previous years, reductions were made in passenger fares and freight rates.

(vii.) *Working Expenses per Average Mile Worked and per Train Mile Run, 1901 to 1910.* The following table shews the working expenses per average mile worked and per train mile run in each State for the years 1901 to 1910 inclusive:—

GOVERNMENT RAILWAYS.—WORKING EXPENSES PER AVERAGE MILE WORKED, AND PER TRAIN MILE RUN, 1901 to 1910.

Year.	N.S.W.	Victoria.*	Q'land.	S. Aust.	N. Ter.	W. Aust.	Tas.	Cwlth.
Working Expenses per Average Mile Worked.								
	£	£	£	£	£	£	£	£
1900-1 ...	725	643	378	420	174	771	†377	570
1901-2 ...	768	663	354	397	238	927	†370	596
1902-3 ...	737	609	311	360	88	870	†355	556
1903-4 ...	701	560	287	389	91	768	‡354	536
1904-5 ...	668	657	266	422	90	801	365	542
1905-6 ...	686	653	278	438	95	748	367	545
1906-7 ...	729	693	291	478	91	678	395	566
1907-8 ...	783	717	325	521	97	551	429	583
1908-9 ...	829	740	356	500	87	494	434	594
1909-10 ...	904	819	400	581	86	522	447	651
Working Expenses per Train Mile Run.								
	d.	d.	d.	d.	d.	d.	d.	d.
1900-1 ...	45.56	45.01	43.66	39.83	200.39	60.78	†46.46	46.26
1901-2 ...	46.71	46.07	42.05	39.44	274.67	66.89	†46.06	47.58
1902-3 ...	47.10	47.41	41.88	39.75	101.07	64.95	†42.85	47.92
1903-4 ...	52.13	52.92	41.93	43.35	100.57	61.62	‡42.05	51.01
1904-5 ...	50.26	59.11	39.76	46.87	102.16	70.34	43.55	53.15
1905-6 ...	46.70	56.63	39.23	47.34	109.15	66.16	43.79	50.62
1906-7 ...	46.33	56.28	35.75	48.06	103.14	65.21	45.36	49.50
1907-8 ...	45.72	56.31	38.56	46.44	108.83	61.01	47.12	48.89
1908-9 ...	47.01	53.46	39.84	45.84	100.37	56.98	47.60	48.32
1909-10 ...	50.84	57.77	41.61	47.34	98.54	59.86	47.94	51.38

* Including special expenditure and charges referred to above. † For the calendar years 1901, 1902, and 1903 respectively. ‡ Estimated for a period of twelve months ended the 30th June, 1904.

15. **Distribution of Working Expenses, 1901 to 1910.**—The subjoined table shews the distribution of working expenses, among four chief heads of expenditure, for each year from 1901 to 1910 inclusive:—

GOVERNMENT RAILWAYS.—DISTRIBUTION OF WORKING EXPENSES, 1901 to 1910.

Year.	N.S.W.	Victoria.*	Q'land.	S. Aust.	N. Ter.	W. Aust.	Tas.	C'wealth.
	£	£	£	£	£	£	£	£
MAINTENANCE (£,000 OMITTED).								
1900-1 ...	485	506	409	185	18	194	†60	1,857
1901-2 ...	522	490	356	167	29	247	†58	1,869
1902-3 ...	487	438	293	139	7	265	†52	1,681
1903-4 ...	519	449	278	164	7	265	‡49	1,731
1904-5 ...	491	502	278	207	7	344	55	1,884
1905-6 ...	540	572	288	203	8	293	54	1,958
1906-7 ...	593	589	295	274	7	266	58	2,082
1907-8 ...	622	649	323	313	8	226	62	2,203
1908-9 ...	628	626	395	270	7	210	62	2,198
1909-10 ...	699	644	441	289	7	243	64	2,387
LOCOMOTIVE, CARRIAGE, AND WAGON CHARGES (£,000 OMITTED).								
1900-1 ...	936	783	396	363	4	497	†64	3,043
1901-2 ...	1,060	845	390	344	3	670	†64	3,376
1902-3 ...	1,090	763	344	317	3	643	†62	3,222
1903-4 ...	1,054	720	318	343	4	582	‡64	3,085
1904-5 ...	1,024	763	314	360	3	577	63	3,104
1905-6 ...	1,057	788	337	386	3	567	66	3,204
1906-7 ...	1,132	845	358	405	3	535	73	3,351
1907-8 ...	1,250	956	417	442	4	484	81	3,634
1908-9 ...	1,409	993	477	441	4	472	81	3,877
1909-10 ...	1,616	1,226	562	512	3	545	85	4,549
TRAFFIC EXPENSES (£,000 OMITTED).								
1900-1 ...	537	617	233	165	2	296	†41	1,891
1901-2 ...	589	672	226	163	2	306	†42	2,000
1902-3 ...	605	593	207	152	2	312	†43	1,914
1903-4 ...	602	586	197	152	2	307	‡43	1,889
1904-5 ...	596	563	205	153	2	302	44	1,865
1905-6 ...	631	588	218	158	2	305	45	1,947
1906-7 ...	683	593	238	172	2	301	46	2,035
1907-8 ...	742	613	290	196	2	270	50	2,163
1908-9 ...	805	641	330	210	2	264	51	2,303
1909-10 ...	852	684	385	242	2	282	52	2,499
OTHER CHARGES (£,000 OMITTED).								
1900-1 ...	85	168	21	17	...	58	†9	358
1901-2 ...	97	158	21	17	...	33	†8	334
1902-3 ...	85	239	20	16	...	27	†9	396
1903-4 ...	84	268	19	16	...	27	‡9	423
1904-5 ...	81	395	18	17	...	33	10	554
1905-6 ...	80	268	20	17	...	37	9	431
1906-7 ...	91	326	21	18	...	35	9	500
1907-8 ...	102	218	23	19	...	27	9	398
1908-9 ...	110	254	25	21	...	28	10	448
1909-10 ...	109	264	26	26	1	27	11	464

* Including special expenditure and charges referred to in paragraph 14 hereof. † For the calendar years 1901, 1902, and 1903 respectively. ‡ Estimated for a period of twelve months ended the 30th June, 1904.

16. **Net Revenue, Total and per Cent. of Capital Cost, 1901 to 1910.**—The table given hereunder shews the net sums available to meet interest charges, and also the percentage of such sums upon the capital cost of construction and equipment, in each State for the years 1901 to 1910 inclusive:—

GOVERNMENT RAILWAYS.—NET REVENUE AND PERCENTAGE OF NET REVENUE UPON CAPITAL COST, 1901 to 1910.

Year.	N.S.W.	Victoria.*	Q'land.	S. Aust.	N. Ter.	W. Aust.	Tas.	Cwlth.
Net Revenue (£,000 omitted).								
	£	£	£	£	£	£	£	£
1900-1 ...	1,531	1,262	259	508	—12	309	†32	3,889
1901-2 ...	1,401	1,202	389	396	—22	265	†60	3,691
1902-3 ...	1,049	1,015	371	452	— 2	306	†81	3,272
1903-4 ...	1,177	1,416	494	485	4	408	‡82	4,066
1904-5 ...	1,492	1,360	599	536	2	354	72	4,415
1905-6 ...	1,926	1,571	683	585	1	433	69	5,268
1906-7 ...	2,210	1,659	917	707	1	401	73	5,968
1907-8 ...	2,229	1,438	897	772	...	494	76	5,906
1908-9 ...	2,076	1,663	876	698	...	535	76	5,924
1909-10 ...	2,209	1,626	924	771	...	541	72	6,143
Percentage of Net Revenue to Capital Expenditure.								
	%	%	%	%	%	%	%	%
1900-1 ...	3.93	3.14	1.31	3.86	—0.98	4.35	†0.85	3.15
1901-2 ...	3.45	2.96	1.94	2.98	—1.91	3.58	†1.56	2.92
1902-3 ...	2.52	2.48	1.83	3.37	—0.13	3.75	†2.09	2.53
1903-4 ...	2.78	3.43	2.36	3.59	0.32	4.56	‡2.10	3.09
1904-5 ...	3.46	3.29	2.77	3.95	0.20	3.61	1.83	3.30
1905-6 ...	4.42	3.80	3.14	4.30	0.09	4.34	1.75	3.90
1906-7 ...	4.94	4.00	4.20	5.16	0.06	3.90	1.84	4.36
1907-8 ...	4.88	3.43	3.97	5.57	0.03	4.60	1.91	4.23
1908-9 ...	4.36	3.91	3.74	5.10	...	4.85	1.90	4.13
1909-10 ...	4.52	3.77	3.80	5.56	...	4.75	1.79	4.18

* In addition to ordinary working expenses, special expenditures and charges paid out of each year's gross revenue have been deducted; see paragraph 14 above. † For the calendar years 1901, 1902, and 1903 respectively. ‡ Partly estimated.

(i.) *Net Revenue per Average Mile Worked and per Train Mile Run, 1901 to 1910.* Tables shewing the gross earnings and the working expenses per average mile worked and per train mile run have been given above. The net earnings, *i.e.*, the excess of gross earnings over working expenses, per average mile worked and per train mile run are shewn in the following tables :—

GOVERNMENT RAILWAYS.—NET REVENUE PER AVERAGE MILE WORKED AND PER TRAIN MILE RUN, 1901 to 1910.

Year.	N.S.W.	Vic.*	Q'land.	S. Aust.	N. Ter.	W. Aust.	Tas.	C'wealth.
Net Revenue per Average Mile Worked.								
	£	£	£	£	£	£	£	£
1900-1 ...	543	391	92	292	— 79	228	†70	310
1901-2 ...	475	368	139	228	—152	195	†128	290
1902-3 ...	341	304	134	260	— 10	213	†173	252
1903-4 ...	365	420	175	279	26	266	‡174	306
1904-5 ...	455	402	195	308	16	226	153	323
1905-6 ...	572	463	220	335	7	269	146	381
1906-7 ...	645	489	292	390	5	239	155	424
1907-8 ...	643	423	277	415	2	270	161	410
1908-9 ...	583	490	254	371	...	271	162	398
1909-10 ...	609	473	262	407	...	257	153	404
Net Revenue per Train Mile Run.								
	d.	d.	d.	d.	d.	d.	d.	d.
1900-1 ...	34.13	27.38	10.69	27.73	— 90.64	17.96	†8.68	25.17
1901-2 ...	28.87	25.56	16.50	22.53	—175.40	14.11	†15.93	23.16
1902-3 ...	21.79	23.68	17.99	28.78	— 11.94	15.90	†20.95	21.74
1903-4 ...	27.17	37.04	25.49	31.15	28.81	21.34	‡20.74	29.10
1904-5 ...	34.20	36.17	29.22	34.11	18.45	19.84	18.25	31.69
1905-6 ...	38.97	40.16	31.02	36.25	8.22	23.82	17.40	35.37
1906-7 ...	40.95	39.68	35.93	39.17	5.73	23.04	17.78	37.07
1907-8 ...	37.54	33.22	32.83	36.97	3.11	29.82	17.69	34.38
1908-9 ...	33.05	35.36	28.44	34.03	0.48	31.28	17.70	32.43
1909-10 ...	34.28	33.34	27.19	34.15	...	29.49	16.39	31.89

* See footnote * to preceding table. † See footnote † to preceding table. ‡ See footnote ‡ to preceding table.

17. **Traffic Conditions.**—Reference has already been made to the difference in the traffic conditions on many of the lines of the Commonwealth (see paragraphs 12, 13, and 14 hereof). These conditions differ not only in the several States, but also on different lines in the same State, and this is true with regard to both passenger and goods traffic. By far the greater part of the population of Australia is confined to a fringe of country near the coast, more especially in the eastern and southern districts. A large proportion of the railway traffic between the chief centres of population is therefore carried over lines in the neighbourhood of the coast, and is thus, in some cases, open to sea-borne competition. On most of the lines extending into the more remote interior districts traffic is light; the density of population diminishes rapidly as the coastal regions are left behind; there is a corresponding diminution in the volume of traffic, while, in comparison with other more settled countries, there is but little back-loading.

As an indication of the different traffic conditions prevailing in the several States, the following table is given shewing the numbers of passenger journeys and the tons in goods carried (*a*) per 100 of the mean population; and (*b*) per average mile worked of each State during the financial year 1909-10:—

PASSENGER JOURNEYS AND TONNAGE OF GOODS AND LIVE STOCK, 1909-10.

Particulars.		N.S.W.	Vic.	Q'land.	S.A.	N.T.	W.A.	Tas.	Cwlth.
(*a*) PER 100 OF MEAN POPULATION.									
Passenger journeys	No.	3,308	6,543	2,315	3,700	89	4,851	883	4,167
Goods and live stock	Tons	518	343	*464	601	72	820	*226	472
(*b*) PER AVERAGE MILE OF LINE WORKED.									
Passenger journeys	No.	14,798	24,784	3,753	8,071	18	6,266	3,482	11,982
Goods and live stock	Tons	2,315	1,299	*752	1,310	15	1,067	*892	1,358

* Exclusive of live stock.

Particulars of the actual numbers of passengers and tons of goods and live stock carried have already been given (see paragraph 5 hereof).

(i.) *Metropolitan and Country Passenger Traffic.* A further indication of the difference in passenger traffic conditions might be obtained from a comparison of the volume of metropolitan, suburban, and country traffic in each State. Particulars are, however, available only for the States of New South Wales and Victoria. The subjoined table shews the number of metropolitan and country passengers carried in each of the States mentioned and the revenue derived therefrom during the year 1909-10:—

METROPOLITAN, SUBURBAN, AND COUNTRY PASSENGER TRAFFIC, 1909-10.

Particulars.	Number of Passenger Journeys.			Revenue.		
	Metropolitan.	Country.	Total.	Metropolitan.	Country.	Total.
				£	£	£
N.S.W. ...	*48,147,012	5,497,259	53,644,271	*564,463	1,259,630	1,824,093
Vic. ...	†78,638,035	6,642,200	85,280,235	†783,178	1,089,603	1,872,781

* Within 34 miles of Sydney and Newcastle, and including Richmond and Branxton lines.
† Within 20 miles of Melbourne.

From this table it may be seen that the number of passenger-journeys in country districts in Victoria is only slightly greater than the corresponding number in New South Wales, while the number of metropolitan passenger-journeys in Victoria is far greater than in New South Wales, although in the latter State both Sydney and Newcastle are included. In Sydney a larger proportion of the suburban traffic is carried by the tramway systems than in Melbourne.

(ii.) *Melbourne Suburban Passenger Traffic, 1908-9.* In a report of the Victorian Railways Commissioners with regard to the approximate financial results of the Melbourne suburban passenger traffic for the year ended 30th June, 1909, it is stated that the gross revenue, including that derived from passengers, parcels, horses, dogs, mails, telegraphs, rentals, advertising, etc., was £781,983, and the working expenses, including maintenance and replacements of rolling-stock, general expenses, pensions and gratuities, and accident and fire insurance funds, etc., was £603,293, or 77.14 per cent. on the gross revenue. The net revenue was, therefore, £178,690, but taking into consideration an amount of £224,350 for interest charges, estimated on the basis of 3.73 per cent. on the capital cost allocated to the suburban passenger traffic, viz., £6,014,759, the approximate deficiency on the year's operations was £45,660.

The following table shews the train mileage, approximate allocation of gross revenue, estimated working expenses, and annual interest charges (calculated at 3.73 per cent. on the estimated capital cost) in respect of the specified sub-divisions of the Melbourne suburban passenger service for the year ended 30th June, 1909 :—

PROFIT AND LOSS ON MELBOURNE SUBURBAN PASSENGER TRAIN SERVICES, 1908-9.

Service or Group of Services.	Train Mileage.	Approximate Allocation of Gross Revenue.	Estimated Working Expenses.	Estimated Interest Charges.	Total Estimated Working Expenses and Working Charges.	Profit or Loss.	
						Profit.	Loss.
	Miles.	£	£	£	£	£	£
Flinders St. to Williamstown Pier Spencer St. to Werribee ... ... Spencer St. to W'town. Racecourse	350,853	85,025	65,436	21,700	87,136	...	2,111
Spencer St. to St. Albans	82,522	6,121	14,853	2,942	17,795	...	11,674
Flinders St. to Coburg and Fawkner ...	153,478	15,454	29,211	12,913	42,124	...	26,670
Flinders St. to Broadmeadows ... Spencer St. to Flemington Racecourse " " Royal A'grl. Show Grds.	338,607	88,231	59,722	15,230	74,952	13,279	...
Princes Bridge to Reservoir ... " " North Fitzroy " " Eltham ...	444,544	74,114	82,432	31,315	113,747	...	39,633
Flinders St. to Ringwood ... " " Kew ... ... " " Darling ... ... Outer Circle line...	612,069	151,531	109,876	48,651	158,527	...	6,996
Flinders St. to St. Kilda...	179,823	57,162	32,690	13,620	46,310	10,852	...
" " Port Melbourne... ...	100,821	19,160	21,894	9,598	31,492	...	12,332
Flinders St. to Dandenong ... Spring Vale Cemetery line ... Flinders St. to Frankston ...	601,653	149,484	102,049	28,287	130,336	19,148	...
Flinders St. to Sandringham	503,679	135,701	85,130	40,094	125,224	10,477	...
Total	3,368,049	781,983	603,293	224,350	827,643	53,756	99,416

The allocation of the aggregate passenger revenue to the various suburban services in the above table is only a close approximation, as the precise apportionment could not be determined except by the tolling process, but as the allocation is based on the known outwards bookings, and on the tolled results of some years ago, it is sufficiently accurate for the purpose.

(iii.) *Goods Traffic.* The differing conditions of the traffic in each State might also, to some extent, be analysed by an examination of the tonnage of various classes of commodities carried and of the revenue derived therefrom. Comparative particulars regarding the quantities of some of the leading classes of commodities carried on the Government railways are available for all the States except Tasmania ; information regarding the revenue derived from each class of commodity is not, however, generally available in a comparable form. In this connection it may be stated that the following resolution was passed at the Interstate Conference of Railway Commissioners held in Melbourne in May last (see paragraph 1, page 696 hereof) :—"That in view of the variations in the

character and classification of the goods traffic in the different States the sub-divisions of tonnage carried and revenue in each State shall be those which best suit local conditions."

The following table shews the number of tons of various representative commodities carried, and the percentage of each class on the total tonnage carried during the financial year 1909-10:—

CLASSIFICATION OF COMMODITIES CARRIED, 1909-10.*

State.*	Minerals.	Fire-wood.	Grain and Flour.	Hay, Straw, and Chaff.	Wool.	Live Stock.	All other Commodities.	Total.
TONS CARRIED.								
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
New South Wales ...	†4,837,662	282,990	608,405	209,556	138,779	463,669	1,607,657	†8,148,718
Victoria	‡537,266	637,730	933,967	211,206	78,598	348,245	1,721,428	4,468,440
Queensland ...	1,195,509	232,824	‖31,286	§113,143	62,416	¶	1,090,651	2,655,829
South Australia ...	1,165,499	171,467	456,884	57,368	24,234	85,437	521,780	2,482,669
Western Australia...	407,876	656,383	166,632	86,442	6,314	50,770	867,442	2,241,859
PERCENTAGE ON TOTAL TONNAGE CARRIED.								
	%	%	%	%	%	%	%	%
New South Wales ...	†59.37	3.47	7.47	2.57	1.70	5.69	19.73	100.00
Victoria	‡12.02	14.27	20.90	4.73	1.76	7.79	38.53	100.00
Queensland ...	45.01	8.39	‖1.18	§4.26	2.35	¶	38.81	100.00
South Australia ...	46.94	6.91	18.40	2.31	0.98	3.44	21.02	100.00
Western Australia...	18.19	29.28	7.43	3.86	0.29	2.26	38.69	100.00

* Tasmanian figures are not available. † Exclusive of 244,320 tons of coal, on which only shunting and haulage are collected. ‡ Coal, stone, lime, and bricks. ‖ Flour only. § Sugar cane. ¶ Not available.

18. **Passenger-Mileage and Ton-Mileage.**—The useful comparisons and analyses which can be made with regard to the operations of the Government railways in the Commonwealth are to some extent limited, by the absence in the annual reports of the Railway Departments of some of the States, of particulars relating to "passenger-mileage" (*i.e.*, the total distance travelled by passengers) and "ton-mileage" (*i.e.*, the total distance for which goods and live stock are carried), and it is not possible to furnish totals for the Commonwealth in respect of these important particulars. The matter of passenger-mileage and ton-mileage has already been referred to (see page 696). The following resolution in regard thereto was passed at the Interstate Conference of Railway Commissioners held in Melbourne in May, 1909:—"That, in view of the differing conditions in each State, and of the expense involved, it is undesirable to include passenger-mile and ton-mile statistics in the annual reports." The general question as to the desirability of collecting and publishing "passenger-mile" and "ton-mile" statistics by railway companies in the United Kingdom has recently been made the subject of inquiry by a departmental committee appointed by the President of the Board of Trade. The report of this committee has been published in England as a parliamentary paper.[1]

Information regarding "passenger-miles" and "ton-miles" is available either wholly, or in part, for four of the States only, viz., New South Wales, South Australia, Western Australia, and Tasmania, but is not available at all for either Victoria or Queensland. Of the four States which give particulars of the nature indicated, New South Wales is the only one which furnishes the information in a classified form according to class of passengers and nature of commodities carried. The

1. See Cd. 4697. This report is also published at length in "The Statist," London, 19th June, 1909, Vol. LXII., No. 1634. In this report it is stated that ton-mile statistics have been used in India for forty years and for a longer period in America. They are now compiled by the railways of nearly all foreign countries; in England, however, they are not generally compiled. Among the more important statistics deduced from ton-miles and passenger-miles the following are mentioned:—(*a*) The average Train Load of goods and of passengers, obtained by dividing the ton-mileage and the passenger-mileage respectively by the carriage-mileage. (*b*) The average Wagon Load and Carriage Load, obtained by dividing the ton-mileage by the wagon-mileage and the passenger-mileage by the carriage-mileage. (*c*) Ton-miles per Engine Hour. (*d*) The average Length of Haul for goods and passengers respectively, obtained by dividing the ton-mileage and the passenger-mileage by the tonnage and the total number of passengers conveyed. (*e*) The average Receipts per Ton per Mile and per Passenger per Mile, obtained by dividing the goods receipts by the ton-mileage and the passenger receipts by the passenger-mileage. (*f*) The average Density of Traffic per mile of road or per mile of track, obtained by dividing the ton-mileage and passenger-mileage by the length of road or by the length of track.

other three States supply particulars for all classes of passengers and goods together respectively. The mere record of the total number of passenger-miles and ton-miles for all classes of passengers and for all classes of goods respectively, although of considerable value, would appear to be insufficient to enable the whole field of railway operations to be adequately analysed, or the extent to which efficiency has been secured and improvements in working have been effected to be accurately gauged.

(i.) *Passenger-Miles.* Particulars for the whole of the Commonwealth period regarding total "passenger-miles" are available for one State only, namely, Tasmania. For New South Wales particulars are available for suburban and extended-suburban traffic—*i.e.*, including all stations within 22 miles of Newcastle, within 34 miles of Sydney, and including Richmond and Branxton. For South Australia particulars are available for each year since 1904. No particulars are available for other States. In the tables given below the average number of passengers carried per "train," etc., is obtained by dividing the number of "passenger-miles" by the number of "passenger-train-miles." The averages given for New South Wales are naturally smaller than those for the other States, since the figures for New South Wales refer to suburban and extended-suburban traffic only.

SUMMARY OF "PASSENGER-MILES," 1901 to 1910.

Year ended the 30th June.	Passenger Train Mileage.	Number of Passenger Journeys.	Total Passenger Miles.	Amount Received from Passengers.	Average Number of Passengers carried per Train.	Average Mileage per Passenger-journey.	Average Receipt per Passenger-mile.	Average Fare per Passenger-journey.
	Miles.	No. (,000 omitted).	No. (,000 omitted).	£	No.	Miles.	d.	d.
NEW SOUTH WALES.†								
1901	*	26,042	164,638	344,873	*	6.32	0.50	3.17
1902	*	27,999	184,064	361,849	*	6.57	0.47	2.92
1903	*	29,799	186,803	381,245	*	6.27	0.49	3.07
1904	*	31,116	202,550	396,923	*	6.51	0.47	3.06
1905	*	31,855	204,604	400,944	*	6.42	0.47	3.02
1906	*	34,040	223,985	426,931	*	6.58	0.45	3.01
1907	*	37,975	241,836	462,404	*	6.37	0.46	2.92
1908	*	42,730	284,465	504,646	*	6.65	0.43	2.83
1909	*	46,734	310,399	546,904	*	6.64	0.42	2.81
1910	*	48,147	341,498	564,463	*	7.09	0.40	2.81
SOUTH AUSTRALIA (PROPER).								
1905	1,489,035	9,867	114,378	312,179	77	11.61	0.65	7.59
1906	1,538,166	10,715	125,862	334,797	82	11.75	0.64	7.50
1907	1,667,324	11,498	138,689	337,916	83	12.06	0.58	7.05
1908	1,874,318	12,839	154,038	426,261	82	12.00	0.66	7.97
1909	1,975,455	13,855	160,763	435,430	81	11.60	0.65	7.54
1910	2,116,527	15,282	177,801	482,676	84	11.63	0.65	7.58
TASMANIA.								
1901	352,705	777	19,563	78,327	55	25.16	0.96	24.18
1902	335,604	761	19,444	88,541	58	25.60	1.09	27.91
1903	337,773	814	19,373	93,969	57	23.78	1.16	27.69
1904‡	357,144	873	21,000	99,632	59	24.05	1.10	27.13
1905	343,868	824	20,693	95,335	60	25.16	1.10	27.77
1906	348,006	860	21,712	98,202	62	25.23	1.08	27.38
1907	357,076	952	23,756	105,555	67	24.95	1.06	26.61
1908	356,845	1,439§	32,639§	112,987	91	22.65	0.83	18.84
1909	373,633	1,547§	32,476§	113,546	87	20.99	0.84	17.61
1910	375,425	1,650§	34,066	115,181	91	20.65	0.81	16.75

* Not available for suburban lines. † Suburban lines only; includes distances within 34 miles of Sydney and including Richmond and Branxton. ‡ Partly estimated. § Compiled on new basis, so as to be uniform with other States.

(ii.) *Ton-Miles.* Particulars regarding total "ton-miles" are available for each year since 1901 for the States of New South Wales, South Australia, and Tasmania; corresponding particulars for Western Australia are available for the last four years only. The average freight-paying load carried per "train" is obtained by dividing the total "ton-miles" in the third column by the goods-train mileage in the first column. In New South Wales the tonnage carried is exclusive of coal, on which only shunting and haulage charges are collected, and the amount of earnings specified excludes terminals. In South Australia and Tasmania they include terminals, while in Western Australia they exclude wharfage and jetty dues, but include all other charges.

SUMMARY OF "TON-MILES," 1901 to 1910.

Year ended the 30th June.	Goods Train Mileage.	Total Tons Carried.	Total "Ton-Miles."	Earnings.	Average Freight-paying Load carried per "Train."	Average Miles per Ton.	Earnings per "Ton-miles."
	No.	No. (,000 omitted.)	No. (,000 omitted.)	£	Tons.	Miles.	d
NEW SOUTH WALES.							
1901	5,836,587	6,398	404,740	1,904,371	69.34	63.26	1.13
1902	6,586,032	6,164	436,814	1,947,305	66.32	70.87	1.07
1903	6,405,756	6,304	399,579	1,624,248	62.38	63.38	0.98
1904	5,304,660	6,376	393,094	1,692,966	74.10	61.65	1.03
1905	5,431,974	6,418	437,416	1,899,239	80.53	68.15	1.04
1906	6,512,145	7,335	478,642	2,268,321	73.50	65.25	1.14
1907	7,294,165	8,472	564,709	2,516,038	77.42	66.66	1.07
1908	7,746,484	9,804	617,642	2,597,980	79.73	63.00	1.01
1909	7,841,413	8,972	613,469	2,544,457	78.23	68.38	1.00
1910	8,197,953	8,149	690,150	2,866,070	84.19	84.69	0.99
SOUTH AUSTRALIA (PROPER).							
1901	2,686,789	1,628	202,649	843,019	75.42	124.44	1.00
1902	2,468,326	1,392	170,523	681,045	69.09	122.48	0.96
1903	2,311,250	1,350	165,357	703,522	71.55	122.52	1.02
1904	2,247,003	1,516	178,443	761,298	79.41	117.74	1.02
1905	2,284,071	1,681	201,789	860,037	88.35	120.04	1.02
1906	2,337,001	1,732	205,079	910,106	87.75	118.38	1.07
1907	2,666,919	2,043	239,855	1,083,504	89.94	117.41	1.08
1908	3,135,803	2,256	272,373	1,184,867	86.86	120.73	1.04
1909	2,949,901	2,166	267,271	1,060,077	90.60	123.42	0.95
1910	3,303,777	2,481	303,361	1,208,373	91.82	122.27	0.96
*** WESTERN AUSTRALIA.**							
1907	1,939,959	2,091	144,856	964,653	74.67	69.26	1.60
1908	1,976,204	2,059	142,719	948,373	72.22	69.32	1.59
1909	2,011,468	1,997	143,629	945,956	71.41	71.92	1.58
1910	2,280,736	2,242	163,561	1,042,789	71.71	72.95	1.53
† TASMANIA.							
1901‡	542,977	315	12,848	93,025	23.66	40.93	1.73
1902‡	567,314	407	14,331	109,266	25.26	35.30	1.82
1903‡	593,943	419	13,791	113,597	23.22	34.86	1.97
1904§	609,914	425	14,900	114,361	24.43	35.05	1.84
1905	601,984	377	14,802	109,220	24.59	37.58	1.77
1906	597,913	399	13,626	104,416	22.79	25.46	1.83
1907	624,303	428	14,822	112,457	23.74	34.59	1.82
1908	671,185	465	17,141	123,493	25.54	36.84	1.73
1909	655,486	467	17,257	125,375	26.33	36.92	1.74
1910	684,365	423	18,966	124,675	27.71	44.84	1.58

* Particulars for previous years not available. † Exclusive of live stock. ‡ To 31st December for years 1901, 1902, and 1903; to 30th June for succeeding years. § Partly estimated.

(iii.) *Density of Traffic, 1909-10.* The average densities of passenger traffic and of goods traffic, obtained by dividing the passenger-mileage and the ton-mileage respectively by the average length of line worked during year, are shewn in the following table for the year 1909-10 for those States for which particulars are available :—

DENSITY OF TRAFFIC PER AVERAGE MILE OF LINE OPEN, 1909-10.

Density of—	N.S.W.	S. Aust. (proper).	W. Aust.	Tasmania.
Passenger traffic	94,206	93,901	*	71,869
Goods ,, ...	190,386	160,212	77,812	40,013

* Not available.

(iv.) *Classification of Commodity Ton Mileage, 1910.* New South Wales is the only State for which particulars, specifying the ton-mileage and the earnings per ton-mile for various classes of commodities, are available. It is hoped that in future years it will be possible to give corresponding particulars for the other States.

The subjoined statement gives particulars for the last financial year. Miscellaneous traffic consists of timber, bark, firewood, bricks, drain-pipes, coal, road-metal in six-ton lots, agricultural and vegetable seeds in five-ton lots, and traffic of a similar nature. A and B classes consist of lime, vegetables, tobacco leaf, caustic soda and potash, cement, copper ingots, fat and tallow, water and mining plant in six-ton lots, leather in one and three-ton lots, agricultural implements in five-ton lots, and other traffic of a similar nature. The table does not include 244,320 tons of coal on which only shunting and haulage charges are collected, nor does it include £41,798 for haulage, tonnage dues, etc.

NEW SOUTH WALES.—SUMMARY OF TON-MILEAGE FOR YEAR ENDED 30th JUNE, 1910.

Particulars.	Total Tons Carried.	Total Miles.	Average Miles per Ton.	Earnings (exclusive of Terminals).	Earnings per Ton-Mile.	Percentage on Total Tonnage.
	1000 Tons.	1000 Miles.	Miles.	£	d.	per cent.
Coal, coke, and shale ...	4,310	126,753	29.41	285,583	0.54	52.89
Other minerals ...	347	15,449	44.47	41,835	0.65	4.26
Crude ores	181	14,724	81.53	31,486	0.51	2.22
Miscellaneous ...	440	32,015	72.82	100,769	0.76	5.40
Firewood	283	7,550	26.68	24,951	0.79	3.47
Fruit	59	5,509	93.59	24,848	1.08	0.72
Grain and flour ...	608	150,323	247.08	224,413	0.36	7.48
Hay, straw, and chaff ...	210	43,697	208.52	69,241	0.38	2.57
Frozen meat	30	3,949	129.49	16,371	0.99	0.37
General goods ...	2	687	375.16	7,139	2.49	0.02
A Class	508	49,336	97.02	215,033	1.05	6.24
B ,, ...	280	30,418	108.68	220,035	1.74	3.44
C ,, ...	21	1,012	48.92	9,378	2.23	0.25
1st Class	109	16,327	149.32	203,524	2.99	1.34
2nd ,, ...	110	19,137	173.41	301,403	3.78	1.35
3rd ,, ...	48	7,132	148.40	134,760	4.53	0.59
Wool Class	139	41,504	299.07	337,974	1.95	1.70
Live stock	464	124,628	268.79	617,327	1.19	5.69
Total	8,149	690,150	84.69	2,866,070	1.00	100.00

19. **Interest Returned on Capital Expenditure.**—It may be seen from the figures given in the table in paragraph 16 hereof, that the Government railways in Australia have, on the whole, made a substantial profit during each year since the inception of the Commonwealth, but unfortunately the community does not get the full benefit of this profit, owing to the high rates of interest at which money for railways was borrowed in the early days. Though the average rate during the year ended the 30th June, 1910, was about 3 per cent., an average does not accurately express the position. At an early period the need of constructing railways for the sole purpose of opening up undeveloped districts was recognised, and lines were built which could not possibly pay for some years to come; as these railways always preceded population the money had to be raised at an almost speculative rate of interest, frequently amounting to 6 per cent., while the more recent loans have been effected at less than 3 per cent., hence the railways have been handicapped by a burdensome interest. At the present time also, spur lines are constructed, which can scarcely be expected to instantly return revenue in excess of the expenditure, and so must, for a time at any rate, be a charge on the more developed branches of the railway systems, and tend to increase the ratio of working costs to revenue. It may be noted, however, that although the loans made for expenditure on railway construction and equipment very largely increase the amount of the public debt of the Commonwealth, forming, in fact, more than half the total debt, the money borrowed has not been sunk in undertakings which give no return, but has been expended on works which are increasingly reproductive, yielding in most cases a direct return on the capital expended, and representing a greater value than their original cost. In Europe the national debts of various countries have been incurred principally through the expenses of prolonged wars and the money has gone beyond recovery, but in Australia the expenditure is represented to a large extent by public works which pay a direct return, which is, on the whole, greater than the amount of interest due upon capital invested. In addition to the purely commercial aspect of the figures relating to the revenue and expenditure of the Commonwealth railways, it is of great importance that the object with which many of the lines were constructed should be kept clearly in view; the anticipated advantage in building these lines has been the ultimate settlement of the country rather than the direct returns from the railways themselves, and the policy of the State Governments has been to use the railway systems of the Commonwealth for the development of the country's resources, to the maximum extent consistent with the direct payment by the customers of the railways of the cost of working and interest charges. Further, the money has been spent in developing immense agricultural, pastoral, and mineral resources, which add to the wealth of the community, while the benefits conferred in providing a cheap and convenient mode of transit, and in generally furthering the trade and the best interests of the Commonwealth, are incalculable.

(i.) *Profit or Loss after Payment of Working Expenses and Interest, 1901 to 1910.* The net revenue of the Government railways in each State after payment of working expenses is shewn in paragraph 16 hereof. The following table shews the amount of interest payable on expenditure from loans on the construction and equipment of the railways in each State, the actual profit or loss after deducting working expenses and interest and all other charges from the gross revenue, and the percentage of such profit or loss on the total capital cost of construction and equipment.

In this table the positive sign indicates a profit, the negative a loss. It may be seen that for the Commonwealth as a whole there has been a net profit on the Government railways during each of the last five years of the period dealt with.

The same satisfactory state of affairs applies also to the States of New South Wales, South Australia proper, and Western Australia, and with the exception of the year 1907-8, to Victoria. Tasmania and the Northern Territory both shew a loss for each year of the period 1901 to 1910, as also does Queensland, with the exception of the year 1906-7.

GOVERNMENT RAILWAYS.—INTEREST ON LOAN EXPENDITURE, PROFIT OR LOSS, AND PERCENTAGE OF PROFIT OR LOSS ON TOTAL COST, 1901 to 1910.

AMOUNT OF INTEREST ON RAILWAY LOAN EXPENDITURE (£,000 OMITTED).

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	N. Ter.	W. Aust.	Tas.	Cwlth.
	£	£	£	£	£	£	£	£
1900-1	1,425	1,465	819	454	46	225	142	4,576
1901-2	1,435	1,493	837	470	47	235	140	4,657
1902-3	1,474	1,474	860	467	47	257	142	4,721
1903-4	1,484	1,516	873	471	47	277	143	4,811
1904-5	1,527	1,462	876	469	47	309	144	4,834
1905-6	1,541	1,472	881	475	47	324	148	4,888
1906-7	1,599	1,483	901	480	47	333	148	4,991
1907-8	1,649	1,484	932	494	47	343	149	5,098
1908-9	1,687	1,428	935	500	47	355	150	5,102
1909-10	1,687	1,471	973	508	47	368	152	5,206

PROFIT OR LOSS AFTER PAYMENT OF WORKING EXPENSES, INTEREST, AND OTHER CHARGES.*

	£	£ †	£	£	£	£	£	£
1900-1	+105	—202	—560	+ 53	— 57	+ 83	—109	— 687
1901-2	— 33	—291	—448	— 74	— 69	+ 30	— 81	— 966
1902-3	—426	—459	—489	— 14	— 48	+ 48	— 61	—1,449
1903-4	—307	—100	—379	+ 14	— 43	+131	— 61	— 745
1904-5	— 35	—102	—278	+ 68	— 44	+ 45	— 72	— 418
1905-6	+385	+ 99	—199	+110	— 45	+109	— 80	+ 379
1906-7	+611	+176	+ 16	+228	— 46	+ 68	— 76	+ 977
1907-8	+530	— 47	— 35	+277	— 46	+151	— 73	+ 807
1908-9	+389	+235	— 59	+198	— 47	+179	— 74	+ 821
1909-10	+522	+155	— 49	+263	— 47	+173	— 79	+ 938

PERCENTAGE OF PROFIT OR LOSS TO CAPITAL COST OF CONSTRUCTION AND EQUIPMENT.*

	%	% †	%	%	%	%	%	%
1900-1	+0.27	—0.50	—2.84	+0.43	—4.88	+1.17	—2.87	—0.55
1901-2	—0.08	—0.71	—2.22	—0.59	—5.96	+0.41	—2.10	—0.76
1902-3	—1.02	—1.12	—2.41	—0.12	—4.10	+0.59	—1.57	—1.12
1903-4	—0.73	—0.24	—1.81	+0.12	—3.65	+1.46	—1.57	—0.56
1904-5	—0.08	—0.25	—1.28	+0.51	—3.76	+0.47	—1.83	—0.31
1905-6	+0.88	+0.24	—0.91	+0.82	—3.87	+1.09	—2.03	+0.28
1906-7	+1.36	+0.42	+0.07	+1.66	—3.91	+0.66	—1.92	+0.71
1907-8	+1.27	—0.11	—0.15	+1.99	—3.92	+1.41	—1.84	+0.58
1908-9	+0.82	+0.55	—0.26	+1.11	—3.98	+1.63	—1.85	+0.57
1909-10	+1.07	+0.36	—0.20	+1.90	—4.00	+1.52	—1.97	+0.64

* The positive sign indicates a profit, the negative a loss. † Allowing for payment of special expenditure and charges (see paragraph 14 above).

20. **Passenger Fares and Goods Rates.**—Considerable reductions have been made in recent years in passenger fares and in freight rates. These fares and rates are not only changed from time to time to suit the convenience and varying necessities of the railways, but, as traffic is developed and revenue increased, they are also in many cases reduced to an extent consistent with the direct payment by the customers of the railways of the cost of working and interest charges. In New South Wales, though no reduction in rates was made during the year 1909-10, a reduction to the amount of £60,000 per annum was made on the 10th January, 1909, and further reductions in both rates and fares took effect from the 1st July, 1910. In Western Australia reductions were made in rates in many directions. These account to a large extent for the falling-off in revenue as compared with the previous year, more especially in respect to goods

earnings (see paragraph 11 hereof). In New South Wales the accumulated reductions in rates and fares made since October, 1906, amount to £337,000 per annum, and the rebates from the carriage of fodder and starving stock during the three years prior to June, 1909, to about £140,000, while in Victoria the accumulated reduction in rates and fares since February, 1906, represents an annual value of £332,000.

(i.) *Passenger Fares.* On the Australian Government railways two classes are provided for passenger traffic. The fares charged may be classified as follows:—(*a*) Fares between specified stations (including suburban fares). (*b*) Fares computed according to mileage rates. (*c*) Return, season, and excursion fares. (*d*) Special fares for workingmen, school pupils, and others. Fares in class (*a*) are issued at rates lower than the ordinary mileage rates. Fares in class (*b*) are charged between stations not included in class (*a*). Generally it may be said that mileage-rate fares are computed on the basis of about twopence per mile for first-class and about 1¼ pence per mile for second-class single tickets. In Tasmania, however, the fares are computed on the general basis of 1½ pence per mile first-class, one penny per mile second-class, with a terminal charge of one penny and one-sixth added to total. In New South Wales, Victoria, and Queensland the mileage rates are based upon a tapering principle, *i.e.*, a lower charge per mile is made for a long journey than for a short journey. First-class return fares are generally about 1½ to 1¾ times the single fare, and the second-class are about 30 to 45 per cent. lower than the first-class fares. In Tasmania, however, return fares (except excursions) are double the single fares. Excursion tickets are issued for the return journey at from about single fare to about 1¼ times the single fare. Season tickets and special fares are issued at reduced rates.

The following table shews the passenger fares for different distances charged in each State, between stations for which specific fares are not fixed:—

ORDINARY PASSENGER MILEAGE RATES ON GOVERNMENT RAILWAYS, 1910.

State.	For a journey of—					
	50 Miles.	100 Miles.	200 Miles.	300 Miles.	400 Miles.	500 Miles.
First-class Single Fares.						
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
New South Wales	5 9	13 7	28 7	43 2	56 4	65 8
Victoria	7 6	15 0	30 0	44 6	58 2	72 0
Queensland	8 6	16 0	31 0	45 1	58 2	71 4
South Australia*	8 4	16 8	33 4	50 0	66 8	83 4
Western Australia	8 4	16 8	33 4	50 0	66 8	83 4
Tasmania	7 5	14 8	29 3	...	...	...
Average†	7 8	15 5	30 11	46 7	61 2	75 2
Average per passenger-mile† d.	1.84	1.85	1.86	1.86	1.84	1.80
Second-class Single Fares.						
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
New South Wales	3 7	8 3	17 0	25 4	32 11	39 8
Victoria	5 0	10 0	20 0	29 8	38 10	47 10
Queensland	5 8	10 4	19 9	28 2	35 8	43 2
South Australia*	5 3	10 5	20 10	31 3	41 8	52 1
Western Australia	5 3	10 5	20 10	31 3	41 8	52 1
Tasmania	4 11	9 9	19 7	...	...	...
Average†	5 0	9 10	19 8	29 2	38 2	47 0
Average per passenger-mile† d.	1.20	1.18	1.18	1.17	1.15	1.13

* Ordinary mileage rates are not published; the amounts given are therefore computed from fares between specified stations. † Exclusive of Tasmania for hauls of 300 miles and upwards.

(ii.) *Parcel Rates.* In all the States parcels may be transmitted by passenger train upon payment of the prescribed rates, which are based upon weight and distance carried. The rates vary slightly in the different States. In New South Wales they range from threepence for a parcel not exceeding 3 lbs. for any distance up to 75 miles, to eleven shillings and threepence for a parcel weighing from 84 lbs. to 112 lbs., for a distance of 500 miles. In Victoria the charge for a parcel weighing from 84 lbs. to 112 lbs. for a distance over 450 miles is twelve shillings. The rate in Queensland for a parcel weighing from 85 to 112 lbs. for 500 miles is twelve shillings and sixpence; in South Australia eleven shillings and threepence; in Western Australia thirteen shillings; and in Tasmania for a distance of 250 miles the rate is five shillings and sixpence.

(iii.) *Goods Rates.* The rates charged for the conveyance of goods and merchandise may generally be divided into three classes, viz.:—(*a*) Mileage rates, (*b*) District or "development" rates, and (*c*) Commodity rates. In each of the States there is a number—ranging from 5 in Tasmania to 9 in Victoria—of different classes of freight. The mileage rates are based upon a tapering principle, *i.e.*, a lower charge per ton-mile is made for a long haul than for a short haul. District rates are charged between specified stations and are somewhat lower than the mileage rates excepting in Western Australia, where the terms refer to a special toll of 1s. per ton on goods travelling over certain "district" railways as part payment of the extra cost of working lines laid for developmental purposes through sparsely settled districts. In addition to the ordinary classification of freights under class (*a*), certain commodities, such as wool, grain, agricultural produce, and crude ores, are given special rates, lower than the mileage rates, under class (*c*).

Space will not permit of anything like a complete analysis of goods rates in the several States being here given. As an indication of the range and amount of such rates the subjoined tables are given. The first table shews for each State the truck-load rates charged for hauls of different distances in respect of agricultural produce not otherwise specified; these special rates are here given for this class of produce, since it is generally forwarded in truck-loads.

RATES FOR AGRICULTURAL PRODUCE IN TRUCK-LOADS ON GOVERNMENT RAILWAYS, 1911.

State.	Charge per Ton in Truck-Loads for a Haul of—					
	50 Miles.	100 Miles.	200 Miles.	300 Miles.	400 Miles.	500 Miles.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
New South Wales	5 0	7 6	9 6	10 6	11 4	12 0
Victoria	5 6	8 9	11 6	13 4	15 0	16 8
Queensland	4 7	8 9	11 0	12 0	13 0	14 0
South Australia	6 2	8 9	12 11	17 1	21 3	25 5
Western Australia	6 3	8 11	12 1	17 0	22 0	24 0
Tasmania	4 2	8 4	...	...	...	...
Average*	5 3	8 6	11 5	14 0	16 6	18 5
Average per ton-mile* d.	7.60	6.12	3.42	2.80	2.48	2.21

* Exclusive of Tasmania for hauls of 200 miles and upwards.

The next tables shew for each State the ordinary mileage rates charged per ton for hauls of different distances in respect of (*a*) the highest-class freight, and (*b*) the lowest-class freight :—

ORDINARY GOODS MILEAGE RATES ON GOVERNMENT RAILWAYS, 1911.

State.	Charge per Ton for a Haul of—					
	50 Miles.	100 Miles.	200 Miles.	300 Miles.	400 Miles.	500 Miles.
HIGHEST-CLASS FREIGHT.						
New South Wales	23 0	44 11	78 3	99 1	111 7	119 11
Victoria	26 0	51 0	97 0	134 6	167 9	201 0
Queensland	41 8	75 0	133 4	191 8	220 10	235 5
South Australia	27 1	52 1	97 11	134 7	166 8	194 2
Western Australia	32 1	54 2	97 6	135 5	167 11	195 0
Tasmania	32 0	50 0	96 0	...	...	...
Average*	30 4	51 2	100 0	139 1	166 11	189 1
Average per ton-mile* d.	7.28	6.14	6.00	5.56	5.03	4.55
LOWEST-CLASS FREIGHT.						
New South Wales	5 3	8 11	14 2	17 4	20 5	22 6
Victoria	4 3	7 6	11 3	15 10	21 1	23 2
Queensland	4 7	8 9	15 0	19 2	23 4	27 6
South Australia	4 2	7 10	13 7	17 9	21 11	26 1
Western Australia	5 0	8 4	14 2	19 2	23 4	27 6
Tasmania	4 7	8 9	17 1	...	...	...
Average*	4 8	8 4	14 3	17 10	22 0	25 4
Average per ton-mile* d.	1.12	1.00	0.86	0.71	0.66	0.61

* Exclusive of Tasmania for hauls of 300 miles and upwards.

The classification of commodities varies in the several States. Generally the highest-class freight includes expensive, bulky, or fragile articles, while the lowest-class comprises many ordinary articles of merchandise, such as are particularly identified or connected with the primary industries of each State.

In New South Wales, for example, the highest-class freight comprises such articles as boots, drapery, drugs, groceries, furniture, liquors, crockery and glassware, cutlery, ironmongery, confectionery, and carpets. In the same State the lowest-class freight includes agricultural produce, ores, manures, coal, coke, shale, firewood, bricks, screenings, rabbit-proof netting, and posts and rails.

21. **Numbers and Description of Rolling Stock, 1910.**—The following table shews, so far as possible in a comparable manner, the number of locomotives and of various classes of rolling stock in use on the Government railways in each State. The figures

given are subject to certain limitations, inasmuch as the classification adopted, as well as the various types of rolling stock in use, are not identical in the several States. In Victoria and Queensland, for example, the brake-vans classified under the heading of coaching vehicles are used indiscriminately for coaching and goods traffic. Again, it is believed that in New South Wales the number of passenger vehicles is really greater than that shewn, certain of the other classes of vehicles being used for composite purposes.

CLASSIFICATION OF LOCOMOTIVES AND ROLLING STOCK, 1909-10.

State ...	N.S.W.	Victoria.		Qld.	South Australia.			N.T.	W.A.	Tasmania.		Cwlth.
Gauge...	ft. in. 4 8½	ft. in. 5 3	ft. in. 2 6	ft. in. 3 6	ft. in. 5 3	ft. in. 3 6	Tramways. ft. in. 5 3	ft. in. 3 6	ft. in. 3 6	ft. in. 3 6	ft. 2	—
(a) Locomotives.												
Tender	718	...	...	426	95	*171	...	5	...	65	...	
Tank	154	...	9	39	72	8	...	1	...	7	7	
Total	872	514	9	465	167	179	...	6	318	72	7	2,609
(b) Coaching Stock.												
Passenger vehicles	1,023	1,271	19	522	243	119	13	4	337	171	6	
,, (Joint stock)	...	11	...	...	7	...	...	...	...	...	...	
Brake vans ...	104	307	...	132	31	30	...	2	20	13	...	
,, (Joint stock)	...	4	...	...	3	...	...	...	...	...	...	
Horse boxes ...	293	53	...	89	18	30	...	...	54	38	...	
Carriage trucks ...		...	...	1	...	3	...	...	...	3	...	
Post office vans ...		10	...	...	2	...	...	...	4	...	...	
Other chg. vehicles		133	...	...	2	...	...	1	6	...	...	
Total	1,420	1,789	19	744	306	182	13	7	421	225	6	5,132
(c) Goods and Live Stock Wagons.												
Wagons	14,141				2,523	4,023	78	130	6,926		*	
Brake vans ...	386	11,367	149	9,017	63	95	...	1	133	1,552	67	
Departmental ...	1,028				105	136	...	6	...			
Total	15,555	11,367	149	9,017	2,691	4,254	78	137	7,059	1,552	67	51,926

* Not including 2 passenger motors.

22. **Number of Railway Employees, 1901 to 1910.**—The following table shews the number of employees in the Railway Departments of each State in the year 1901 and in each year from 1906 to 1910 inclusive, classified according to (*a*) salaried staff, and (*b*) wages staff.

From these figures it will be seen that there has been a steady increase in the number of persons engaged in the Railway Departments of the several States. During the period from 1901 to 1910, the total for the Commonwealth has increased from 42,321 to 58,669 —an increase of 16,348, or about 38½ per cent. The largest numerical increase for the individual States was that of New South Wales, viz., 7104.

Separate returns for salaried and wages staff are not available for South Australia or the Northern Territory; the number of salaried staff is therefore included in the wages staff.

GOVERNMENT RAILWAYS.—NUMBER OF EMPLOYEES IN RAILWAY DEPARTMENTS, 1901 to 1910.

State.	1901.		1906.		1907.		1908.		1909.		1910.	
	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.
New South Wales* ...	1,372	11,747	1,650	11,828	1,770	13,411	1,985	15,939	2,163	17,295	2,369	17,854
Victoria	1,432	10,524	1,515	11,432	1,586	12,492	1,651	12,936	1,646	12,861	1,835	14,781
Queensland	994	4,633	906	4,222	949	4,491	1,256	4,766	1,237	6,583	1,471	5,769
South Australia† ...	—	3,855	—	3,520	—	5,531	—	6,326	—}	6,358	—}	7,177
Northern Territory† ...	—	51	—	54	—	72	—	75	—}		—}	
Western Australia ...	876	5,407	928	5,480	921	4,895	802	4,805	769	4,906	779	5,147
Tasmania	178	1,252	178	1,039	177	1,030	182	1,077	190	1,111	195	1,292
Commonwealth ...	4,852	37,469	5,177	37,575	5,403	41,922	5,876	45,924	6,005	49,114	6,649	52,020

* Exclusive of gate-keepers with free house only. † Separate returns for salaried and wages staffs are not available; the number of salaried staff is included with the wages staff.

23. **Accidents.—Number of Killed and Injured, 1901 to 1910.**—The subjoined table gives particulars of the number of persons killed and injured through train accidents and the movement of rolling stock on the Government railways in each State for the year 1900-1, and for each of the years 1905-6 to 1909-10 inclusive:—

GOVERNMENT RAILWAYS.—TOTAL NUMBER OF PERSONS KILLED AND INJURED, 1901 to 1910.

State.	1900-1.		1905-6.		1906-7.		1907-8.		1908-9.		1909-10.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
New South Wales ...	†	†	36	186	28	287	44	355	43	249	50	338
Victoria	45	371	48	630	46	498	79	970	45	451	21	353
Queensland	13	100	7	104	11	136	3	143	11	201	14	382
South Australia	8	50	9	64	12	112	15	132	12	155	10	243
Northern Territory ...	...	...	1	2	...	2	1	...				
Western Australia* ...	5	205	16	320	11	257	14	271	16	284	13	99
Tasmania	1	8	1	11	3	27	2	21	2	28	...	21
Commonwealth ...	...	...	118	1,317	111	1,319	158	1,892	129	1,368	108	1,436

* The returns up to and including the year 1908-9 include all accidents which have occured on Railway premises as well as those caused through train accidents and movement of rolling stock. † Not available.

(c) Graphical Representation of Government Railway Development.

1. **General.**—Its railways are so important a factor in the development of Australia that it has been deemed desirable to graphically represent the main facts of their progress from their beginning, viz., from 1855 onwards. To this end the graphs shewn on pages 742 to 744 have been prepared. The distribution of the railways is shewn on the map on page 723.

2. **Capital Cost and Mileage Open** (page 742).—The graph shews that the ratio between these elements was, naturally enough, very variable from 1855 to 1870, conse-

quent upon progressive decrease in cost of construction. It then became subject to a more regular change, implying reduction of average cost.

3. **Cost per Mile Open.**—The fluctuations in cost per mile open are clearly indicated by the graph on page 742. In 1855 the cost per mile open was no less than £28,430; by 1858 it had fallen to £17,752, when it rose again to a maximum of £35,958 in 1862. It then diminished rapidly till 1883—when it reached £10,496 per mile—then slowly till 1887, when it amounted to £10,017 per mile. Again rising, this rate attained to £10,537 in 1892, since which it has, on the whole, been declining, attaining its lowest value, £9497, in 1910.

4. **Gross Revenue.**—This graph (page 742) exhibits considerable irregularities, the most striking of which are the maxima at 1892 and 1902. The fall commencing in 1892 was in consequence partly of the commercial crisis and partly of the then droughty conditions of several of the States, while that of 1902-3 was due to drought. In the latter case the recovery was very rapid.

5. **Working Expenses and Net Revenue.**—The characteristics of these graphs (page 742), are similar to those of "Gross Revenue," and the same remarks apply. It may be noted, however, that the working expenses are increasing at a much slower rate than gross and net revenue.

6. **Percentage of Working Expenses to Gross Revenue.**—This is shewn for each State and for the Commonwealth on page 743, and for the Commonwealth only, on a larger scale, on page 742. The curve shews considerable fluctuations, but points also to the fact that, although a slight rise occurred in 1908, there was from 1903 to 1907 a rapid, and therefore very satisfactory, decline in the percentage of working expenses to gross revenue; since 1907, however, there has been a steady increase. The fluctuations of this percentage, for the individual States, call for no special comment.

7. **Percentage of Net Revenue on Capital Cost.**—For the Commonwealth this graph is shewn on a large scale on page 742 and on page 744 both for Commonwealth and States. After exhibiting somewhat remarkable oscillations in the earlier years, and less marked ones between 1885 and 1900, and also a rapid fall to 1903, the curve from that year shews a well marked increase until the year 1908, a slight fall occurring in the last year. Maxima were reached in 1865, 1877, 1881, and 1907—viz., 3.44, 3.71, 4.14, and 4.36 per cent.

For the individual States the results are in general very satisfactory, the increases in the percentages recently being greatest for Queensland, New South Wales, and South Australia, less marked for Victoria and Tasmania, and oscillatory for Western Australia.

The remarkable maximum for Western Australia in 1896 is consequent upon the large use made of the western railways at the time of the development of the Western Australian goldfields.

8. **General Indications of Graphs.**—Reviewing the cost of railways, as a whole, it may be noted that for the periods indicated the average cost per mile open on the entire total runs as follows:—

GOVERNMENT RAILWAYS.—AVERAGE COST PER MILE OF LINE OPEN, COMMONWEALTH, 1855 to 1910.

Period	1855-1872.	1873-1882.	1883-1892.	1893-1902.	1903-1910.
Cost per mile	£ 24,561	£ 13,700	£ 10,286	£ 10,010	£ 9,658

For the period 1903 to 1907 the fall in percentage of working expenses on gross revenue was from 68.80 to 57.18 per cent. but it then gradually increased to 61.70 per cent. in 1910. The rise of the percentage of net revenue on total capital cost for the years 1903 to 1907 was from 2.53 to 4.35 per cent., but subsequent years shew a falling off.

While the sinister influence of the drought of 1902 is strikingly shewn in the curves (*a*) by the fall in the gross and net revenue in 1902 and 1903, (*b*) by the fall in the percentage of net revenue on capital cost, and (*c*) by the increase of working expenses on gross revenue, the rapidity of recovery is even more striking, and goes to indicate the great elasticity of the economic condition of the Commonwealth. Still more remarkable is the fact that a group of railways, necessarily constructed largely in accordance with a policy of widespread development of Australia's resources rather than as mere commercial enterprises, and costing so large a sum as £146,882,474 for construction and equipment up to the 30th June, 1910, should, nevertheless, yield so large a revenue, bringing in for the year 1909-10 a return, as pointed out, of no less than 4.18 per cent.

(D.)—Private Railways.

1. **Total Mileage Open, 1910.**—As has been stated in a previous part of this Section (see A. 3) a number of private railway lines have from time to time been constructed in the Commonwealth. By far the greater proportion of such lines, however, has been laid down for the purpose of hauling timber, coal, or other minerals, and is not generally used for the conveyance of passengers or for public traffic; in many cases the lines are often practically unballasted and are easily removable, running through bush and forest country in connection with the timber and sugar-milling industries, and for conveying firewood for mining purposes. Many of these lines may perhaps be said to be rather of the nature of tramways than of railways. Private railways referred to herein include (*a*) lines open to the public for general passenger and goods traffic; and (*b*) branch lines from Government railways and other lines which are used for special purposes and which are of a permanent description. Other lines are referred to in the part of this Section dealing with Tramways (see § 3, *Tramways*).

The following table gives particulars of private railways in the Commonwealth open for traffic up to the 30th June, 1910. A classification of these lines according to their gauge has already been given (see A. 6).

MILEAGE OF PRIVATE RAILWAYS OPEN, 1910.

Particulars.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	C'wealth.
For general traffic ...	141	14	352	...	277	165	949
For special purposes ...	125	37	192	58	565	39	1,016
Total ...	266	51	544	58	842	204	1,965

2. **Classification of Private Railways, 1909-10.**—The subjoined statement gives particulars regarding private railways, so far as returns are available, in each State for the year 1909-10. In this statement the lines inset are sub-branches from the main branches specified.

CLASSIFICATION OF PRIVATE RAILWAYS IN AUSTRALIA, 1909-10.

Railway Lines.	Gauge. ft. in.	Length Miles.	Nature of Traffic Carried, etc.
NEW SOUTH WALES.			
1. BRANCHES FROM NORTHERN LINE, N.S.W. GOVT. RLYS.—			
East Greta to Stanford-Merthyr and connections...	4 8½	24¾	Coal and passengers
Hexham-Minmi	4 8½	6	" "
Brown's line to Richmond Vale	4 8½	11½	Coal
Three other sub-branches	4 8½	5	"
Newcastle-Wallsend Co.'s lines	4 8½	4¾	"
Five sub-branches...	4 8½	4	"
Waratah Coal Co.'s line	4 8½	4½	"
Old Burwood Pit	4 8½	7¾	"
Gunnedah Coal Co.'s line	4 8½	4¾	"
Twelve other branches	4 8½	15	Coal, coke, ores & stone
Total	4 8½	88½	
2. BRANCHES FROM NORTH-COAST LINE GOVT. RAILWAYS—			
New Redhead Coal Co.'s lines, Adamstown to Burwood Extended, and Dudley lines	4 8½	8	Coal and passengers
Seaham Coal Co.'s lines, Cockle Creek to West Wallsend and Seaham collieries	4 8½	6	" "
Nine other branches	4 8½	9	Coal
Total	4 8½	23	
3. BRANCHES FROM SOUTHERN LINE, N.S.W.GOVT. RLYS.—*			
Liverpool-Warwick Farm	4 8½	¾	Racecourse traffic
4. BRANCHES FROM S. COAST LINE, N.S.W. GOVT. RLYS.—†			
Mount Kembla Coal Co.	4 8½	7½	Coal
Corrimal and Balgownie	4 8½	3¾	"
Australian Smelting Co., Dapto	4 8½	2½	Ores
Mount Keira Coal Co., Belmore Basin	4 8½	3	Coal
Nine other branches	4 8½	14	"
Mount Pleasant Coal Co.	3 6	3½	"
Total	4 8½ 3 6	31½ 3½	
5. BRANCHES FROM WESTERN LINE, N.S.W. GOVT. RLYS.—			
Commonwealth Oil Corporation's line from Newnes Junction	4 8½	32	General
Eleven other branches	4 8½	6½	Coal, metal, and ores
Total	4 8½	38½	
6. SILVERTON TRAMWAY—			
Broken Hill and Cockburn	3 6	36	General
7. DENILIQUIN-MOAMA LINE	5 3	45	"
Total for State	4 8½ 3 6 5 3	181½ 39½ 45	

* Three other branch private lines having a total length of 24 miles have been constructed for the conveyance of minerals, but are now closed. † The Illawarra Harbour and Land Corporation's line, 6½ miles long, constructed for general traffic is not now working.

CLASSIFICATION OF PRIVATE RAILWAYS IN AUSTRALIA, 1909-10 (Continued).

Railway Lines.	Gauge.	Length	Nature of Traffic Carried, etc.
VICTORIA.*			
	ft. in.	Miles.	
1. KERANG TO KOONDROOK TRAMWAY	5 3	14	General
2. ALTONA BAY RAILWAY—			
Williamstown racecourse and pit at Altona ...	5 3	2½	Sand and stone
3. TOOBORAC into bush	5 3	24	Firewood
4. TRAWALLA to WATERLOO	5 3	8	„ and gravel
5. CARISBROOK to NEW HAVILAH MINE	5 3	2½	„ & mining timber
Total for State...	5 3	51	

* The Rosstown railway, running between Elsternwick and Oakleigh railway stations, about 5 miles in length, is not in use.

QUEENSLAND.

	ft. in.	Miles.	
1. BRANCHES FROM GREAT NORTHERN LINE, GOVT. RLYS.—			
Ayr tramway (Stuart's Creek to Ayr)	3 6	44	General (chiefly sugar)
Three other lines	3 6	2¼	Mineral traffic
2. BRANCHES FROM NORTH-COAST LINE, GOVT. RAILWAYS—			
Bundaberg to Millaquin	3 6	2	Sugar
3. BRANCH FROM WESTERN LINE, GOVT. RAILWAYS—			
Munro's tramway to Perseverance	3 6	10	Timber & farm produce
Gulland's lines to coal mines	3 6	1¾	Coal
Stafford's lines to coal mines	3 6	½	„
4. BRANCHES FROM CAIRNS LINE, GOVT. RAILWAYS—			
Cairns-Harvey Creek	3 6	31	General (chiefly sugar)
Greenhill branch	2 0	5	Sugar
Chillagoe railway, Mareeba to Mungana	3 6	103	General (chiefly coal and minerals
Mount Garnet tramways, Lappa Jn'tn to Mt. Garnet	3 6	33	„ „ „
Stannary Hills tramway, Boonmoo to Rocky Bluffs	2 0	21	„ „ „
Mount Molloy tramway	3 6	20	„ „ „
Etheridge railway	3 6	143	General
5. BRANCHES FROM MACKAY LINE, GOVT. RAILWAYS—			
*Pioneer shire tramway, Benholme to Kirkup ...	3 6	7¾	„ (chiefly sugar)
*Pinnacle to Finch Hatton	3 6	5¾	„ „ „
6. BRANCH FROM SOUTH-COAST LINE, GOVT. RAILWAYS—			
Beaudesert tramway to Innes Plain and Xmas Creek...	3 6	22	„ (chiefly timber and dairy produce
7. INGHAM TRAMWAY—			
Ingham to Stone River	2 0	18	General
8. GERALDTON TRAMWAY—			
Geraldton towards Herberton...	2 0	20	„ (chiefly sugar)
9. MOSSMAN TRAMWAY—			
Port Douglas to S. Mossman and Mowbray Rivers ...	2 0	16	„
10. BRANCH FROM BOWEN LINE—			
Bowen to Proserpine	3 6	38	„
Total for State... ... ... {	3 6	464	
	2 0	80	

* Worked by Commissioner of Railways on behalf of construction authorities.

SOUTH AUSTRALIA.

	ft. in.	Miles.	
BROKEN HILL PROPRIETARY CO.'S LINE—			
Iron Knob to Spencer's Gulf	3 6	58	Carriage of iron st'ne flux

CLASSIFICATION OF PRIVATE RAILWAYS IN AUSTRALIA, 1909-10 (Continu

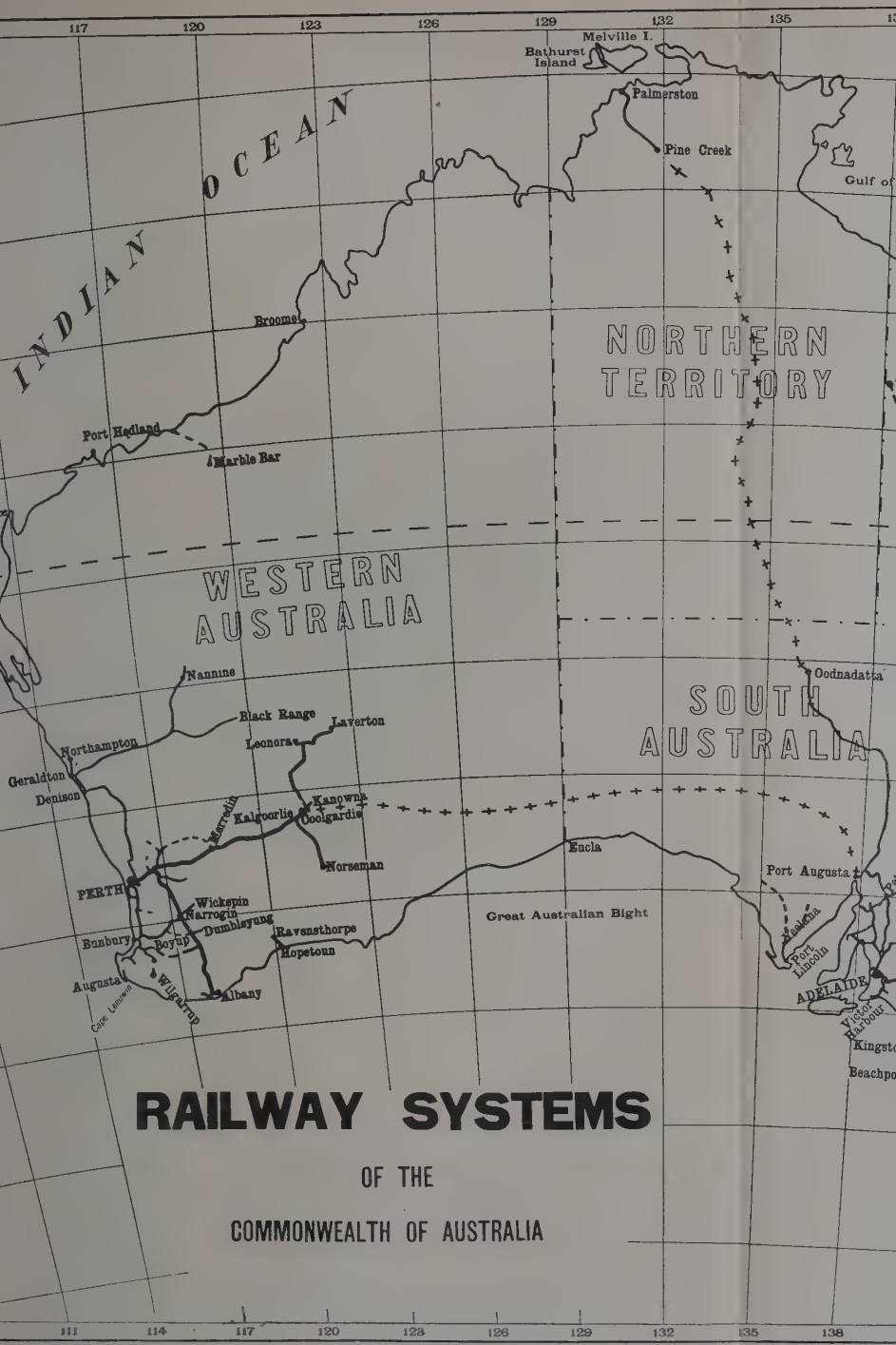
Railway Lines.	Gauge.	Length	Nature of Traffic Carried, etc.
WESTERN AUSTRALIA.*			
	ft. in.	Miles.	
1. MIDLAND RAILWAY—			
Joining Govt. lines at Midland Junction & Walkaway	3 6	277	General
2. W.A. GOLDFIELDS FIREWOOD SUPPLY CO.'S LINE—			
From Kurrawang into bush	3 6	72	Firewood
3. KALGOORLIE AND BOULDER FIREWOOD CO.'S LINE—			
Goodwood railway, from Lake Side into bush ...	3 6	35	"
Lancefield railway into bush	2 0	26	"
Laverton to junction Lancefield railway	2 0	4½	"
4. W.A. JARRAH SAWMILLS LINE—			
From Kirrup to mills and into bush	3 6	6½	Timber
5. TIMBER CORPORATION CO.'S LINE—			
From Greenbushes to mills and into bush	3 6	15	"
6. S.-WEST TIMBER HEWERS' CO-OP. SOCIETY'S LINE—			
From Collie into bush	3 6	8¾	"
7. MILLAR'S KARRI AND JARRAH CO.'S LINES—			
Upper Darling Range railway, from Pickering Brook to Canning mills and bush	3 6	12½	"
Jarrahdale and Rockingham railway, from Mundijing to Rockingham and bush	3 6	60	"
Yarloop railway to mills and bush	3 6	51½	"
Mornington mills rly., from Wokalup to mills & bush	3 6	24½	"
Ferguson River railway, from Dardanup to mills and into bush	3 6	32½	"
Karridale railway, to Hamelin & Flinders Ports from Karridale and into bush	3 6	59	"
Collie Mills railway, from Worsley into bush ...	3 6	15½	"
8. BUNNING BROS. LTD., LINES—			
From Lion Mill, Argyle, and Cardiff to bush ...	3 6	21	"
9. NORTH DANDALUP S.M. RAILWAY—			
To mill and bush	3 6	8	"
10. SEXTON AND DRYSDALE'S BUSH RAILWAY—			
From Noggerup to bush	3 6	4½	"
11. SWAN SAW MILL RAILWAY—			
From Lowden to mill and bush	3 6	5	"
12. W.A. TIMBER AND FIREWOOD CO. LTD. LINE—			
Kurramia railway, from Kalgoorlie-Kanowna railway to bush	3 6	48	Firewood
13. SONS OF GWALIA GOLD MINING CO.'S LINE—			
Railway into bush	1 8	18	"
14. MURCHISON FIREWOOD CO.'S LINE—			
Nallan wood railway, from Nallan siding to bush ...	3 6	24	"
15. WHIM CREEK TO BALLA RAILWAY	2 0	13¾	Copper Ore
Total for State...	3 6	779¾	
	2 0	44½	
	1 8	18	

* To the 31st December, 1909.

TASMANIA.

	ft. in.	Miles.	
1. EMU BAY RAILWAY CO.'S LINES—			
Burnie to Waratah	3 6		
Guildford Junction to Brewery Junction	3 6	103	General
Zeehan to Maestris	3 6		
2. MOUNT LYELL MINING AND RAILWAY CO.'S LINES—			
Regatta Point to Queenstown	3 6	22	"
Linda to Kelly Basin	3 6	30	"
3. SANDFLY COLLIERY CO.'S LINE—			
North-west Bay Co.'s jetty to mine	2 0	12	Minerals
4. HUON TIMBER CO.'S LINE*	3 6	13	Timber
5. TASMANIAN GOLD MINING CO.'S LINE—			
Beaconsfield to Beauty Point†	3 6	3½	Minerals and occasionally passengers
6. ZEEHAN TRAM CO.'S LINE—			
Emu Bay railway to British Queen	2 0	2½	Minerals and occasionally passengers
7. DUCK RIVER RAILWAY—			
Leesville to Parish of Williams‡	3 6	8	Chiefly timber
8. MAGNET SILVER MINING CO.'S LINES—			
Magnet Junction to Magnet	2 0	10	Minerals and passen
Total for State...	3 6	179½	
	2 0	24½	

* Terminal points not fixed in May, 1908, as extensions still under construction. † A branch lines as follows:—Electric railway, 1½ miles long, to reduction works, 2 ft. gauge; surf railways, horse, ¾ mile long, 2 ft. gauge. ‡ Extensions under construction.



For explanation see back of map.

THE GOVERNMENT RAILWAY SYSTEMS OF THE COMMONWEALTH.

EXPLANATION OF MAP.—The continuous lines denote the existing railway lines of Australia, the heavier lines being the main routes.

State lines projected or in course of construction are shewn by dotted lines, thus .....

The two proposed transcontinental lines, viz., one joining the railways of South and Western Australia—and thus connecting continuously by railway Queensland, New South Wales, Victoria, South Australia, and Western Australia, and one connecting Oodnadatta in South Australia with Pine Creek in the Northern Territory, are shewn thus + + + +

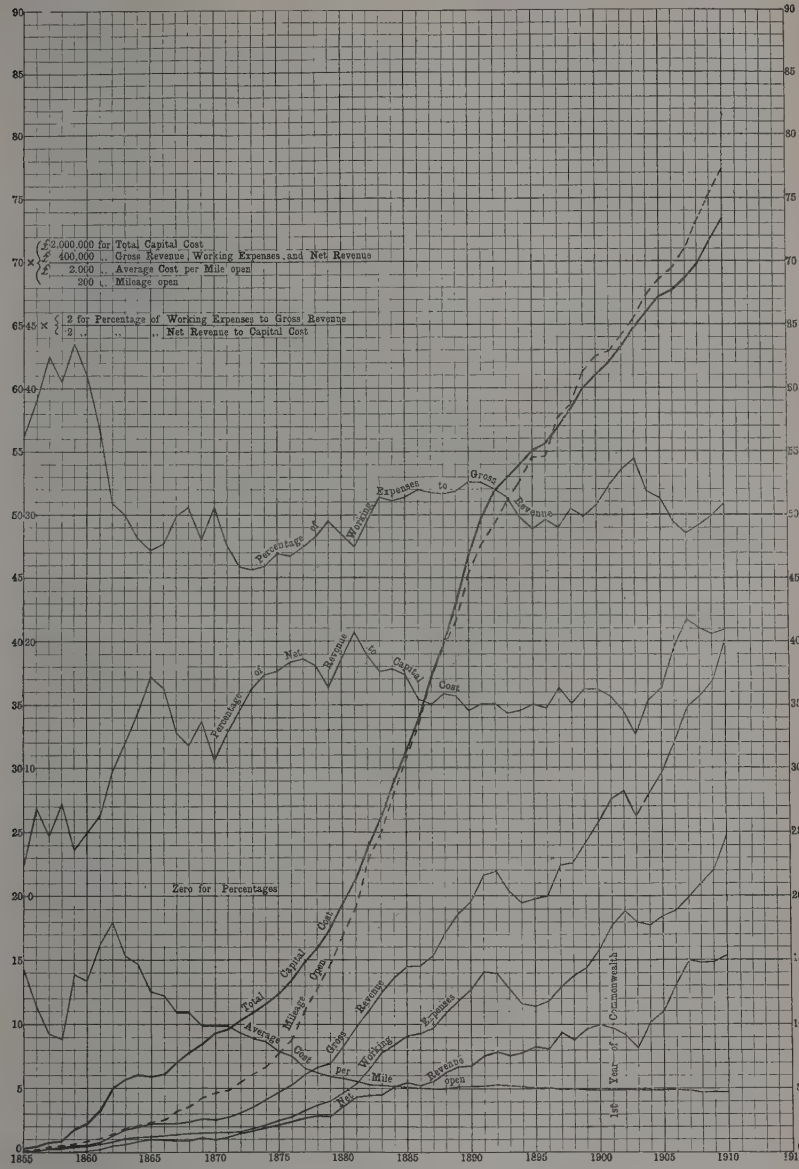
LIST OF PRINCIPAL SECTIONS OF RAILWAYS.

	Miles.
Townsville to Winton ...	368
Townsville to Cloncurry	480
Rockhampton to Longreach	428
Brisbane to Cunnamulla...	604
Toowoomba to Newcastle	520
Brisbane to Sydney (27⅞ hrs.)	725
Newcastle to Inverell ...	405

	Miles.
Sydney to Bourke ...	508
Sydney to Hay	460
,, Cooma ...	266
,, Melb'rne (17 hrs.)	582½
Melb'rne to Adelaide (17½ ,,)	482¾
,, Mildura ...	351
,, Swan Hill ...	215

	Miles.
Adelaide to Broken Hill	334
,, Oodnadatta	688
Perth to Laverton ...	586
,, Nannine ...	616
,, Albany ...	340
Hobart to Launceston ...	133

GRAPHS SHEWING THE FINANCIAL POSITION OF THE GOVERNMENT RAILWAYS OF THE COMMONWEALTH, 1855 TO 1910.



(See pages—total capital cost, 714; mileage open, 700; gross revenue, 715; working expenses 719; net revenue, 722; average cost per mile, 714; percentage of working expenses to gross revenue, 719; percentage of net revenue to capital cost, 722.)

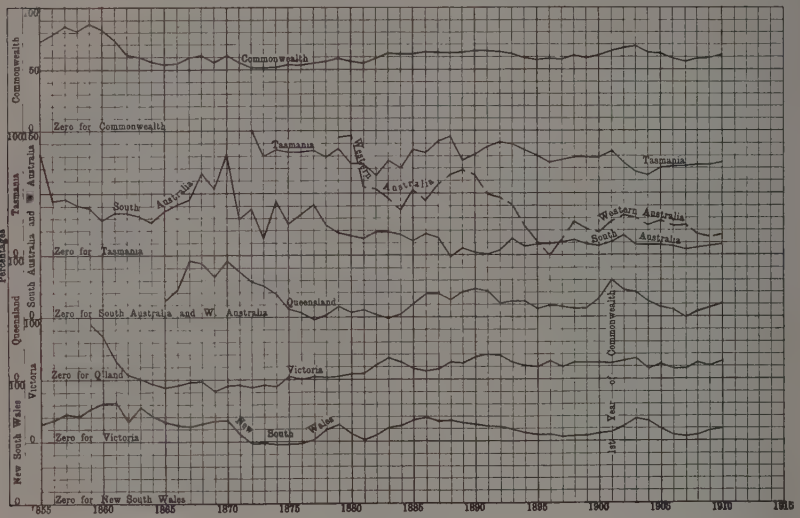
EXPLANATION OF GRAPHS.—In the above diagram the base of each small square represents throughout one year. The significance of the vertical height of each square varies, however, according to the nature of the several curves

In the heavy curve denoting the total capital cost of the railways of the Commonwealth, the vertical side of each square denotes £2,000,000.

In the three lighter curves, representing (i.) gross revenue, (ii.) working expenses, and (iii.) net revenue, the vertical height of each single square denotes £400,000. For the curve of average cost per mile open, the vertical side of the small square denotes £2000. The mileage open is shewn by a dotted curve the vertical side of each square representing 200 miles.

For the percentages a new zero is taken at "20" on the scale for the general diagram. The vertical height of each square represents 2 per cent. in the curve shewing the percentage of working expenses to gross revenue. For the curve of percentage of net revenue to capital cost, the vertical height of each square represents only 0.2, that is to say, the vertical scale is ten times that of the preceding curve.

GRAPHS SHEWING PERCENTAGES OF WORKING EXPENSES TO GROSS REVENUE OF GOVERNMENT RAILWAYS FOR STATES AND COMMONWEALTH, 1855 TO 1910.

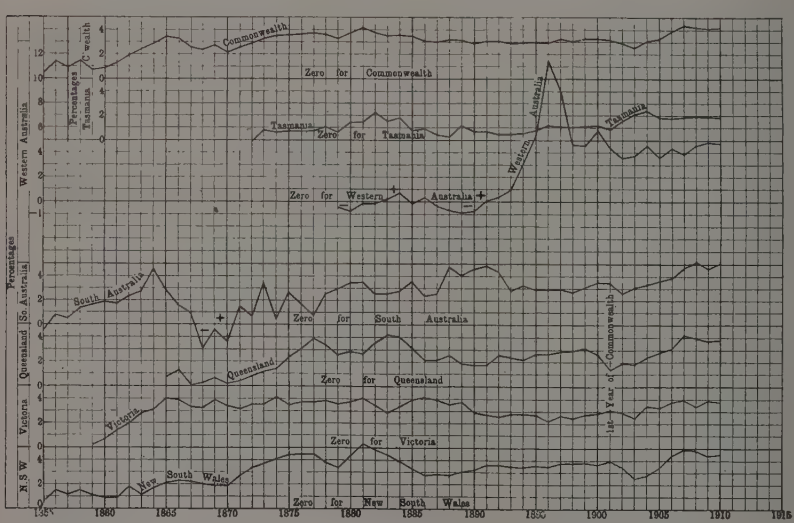


(See page 719.)

EXPLANATION OF GRAPHS.—In the above diagram the base of each small square represents throughout one year. The vertical side of a small square denotes throughout 10 per cent., the heavy zero lines being different for each State and the Commonwealth, with, however, one exception, viz., that the zero line for South and Western Australia is identical.

The curve for Victoria commences in 1859; that for Queensland in 1865; that for Tasmania in 1872; and that for Western Australia in 1879, these being the years in which the Government Railway systems of the several States were inaugurated.

GRAPHS SHEWING PERCENTAGES OF NET REVENUE TO CAPITAL COST OF GOVERNMENT RAILWAYS FOR STATES AND COMMONWEALTH, 1855 TO 1910.



(See page 722.)

EXPLANATION OF GRAPHS.—In the above diagram the base of each small square represents throughout one year. The vertical side of a small square denotes 1 per cent., the thick zero lines, however, for each State and for the Commonwealth being different. This was necessary to avoid confusion of the curves.

Where the curve for any State falls below that State's zero line, loss is indicated, the working expenses having exceeded the gross revenue.

The curve for Victoria commences in 1859; that for Queensland in 1865; that for Tasmania in 1872; and that for Western Australia in 1879, these being the years in which the Government railway systems of the several States were inaugurated.

3. **New South Wales.**—In this State the mileage of private railways open to the public for general traffic at the end of 1909, was 141, and of lines used for special purposes, 125 miles. Most of these lines were constructed primarily for the purpose of conveying coal from the mines to the Government railway systems. Particulars for the year 1909 of the operations of lines open for general traffic are given, so far as available, in the table on page 747.

(i.) *Private Railways Open for General Traffic.* The most important of the lines open for general traffic are as follows:—(*a*) *The Deniliquin-Moama Line.* In 1874 permission was granted by the New South Wales Government to a private company to construct a line forty-five miles long from Deniliquin, in the Riverina district, to Moama, connecting with the Victorian Railway system at the Murray Bridge, near Echuca. The line was opened in 1876, the land required being granted by the Government. (*b*) *The Cockburn-Broken Hill Line.* This line is owned by the Silverton Tramway Company. It was opened in 1888, and connects Broken Hill with the South Australian railway system, having a total length of 36 miles. (*c*) *East Greta Line.* This line, belonging to the East Greta Coal Mining Company, runs from East Greta Junction, on the Northern line of the Government railways, to Stanford Merthyr, a distance of 8 miles. (*d*) *The New Redhead Coal Company's Railway.* The lines owned by this company branch from the Northern line of the Government railways, and run from Adamstown to Burwood Extended colliery, and from Adamstown to Dudley colliery, a total distance of 8 miles. The lines are worked by the Railway Department, coal waggons being supplied in part by the coal companies using the line. The colliery companies using the line pay a way-leave for right to run their coal over the line, and the Railway Commissioners allow the New Redhead Company a proportion of the revenue from the passenger and goods traffic. (*e*) *The Seaham Coal Company's Railways.* This line runs from Cockle Creek to West Wallsend and Seaham Collieries, and has a total length of 6 miles. The company leases four passenger coaches from the Government railways, by which all goods and live stock traffic on the line is handled. (*f*) *Hexham-Minmi Railway.* This line branches from the Northern line of the Government railways and has a length of 6 miles. Further particulars are not available. (*g*) *The Commonwealth Oil Corporation's Railway.* This line runs from Newnes Junction on the Great Western Line of the Government railways to the company's refinery, a distance of 32 miles. Three of the Shay geared type of locomotives are in use on this line. (*h*) *The Warwick Farm Line* is a short line, three-quarters of a mile in length, connecting the Government line near Liverpool with the Warwick Farm Racecourse. Government rolling-stock is used.

In addition to the lines referred to above, legislative sanction was obtained in 1890 for the construction of a private line from the flux quarries at Tarrawingee to the Broken Hill line, a distance of 40 miles. The line was purchased by the Government in 1901, and was leased to the Silverton Tramway Company to work for a period of five years at an annual rent of 3 per cent. on the capital outlay.

4. **Victoria.**—In Victoria the only private railway open for general traffic is the Kerang-Koondrook tramway, opened in 1889. The cost of construction of this line to the end of 1909 was £29,213, paid out of a loan advanced by the Victorian Government. The total length is 14¼ miles. The line is at present controlled by the Kerang Shire Council, but proposals have recently been made for its transfer to the Railway Department.

A line running from Elsternwick to Oakleigh, a distance of about 5 miles, has been constructed by a private company, but is not in use.

5. **Queensland.**—In this State private railways open for general traffic may be grouped under two heads:—(i.) Lines constructed primarily for mining purposes, and (ii.) Shire tramways.

(i.) *Mining Railways.* (*a*) *The Chillagoe Railway.* The most important of these is the Chillagoe railway, constructed under the Mareeba to Chillagoe Railway Act 1897,

and opened in 1901. This line runs from Mareeba, on the Cairns railway, to Mungana, a distance of 103 miles. (*b*) *The Stannary Hills Line.* This line branches from the Chillagoe railway at Boonmoo and runs to Rocky Bluff, *via* Stannary Hills, a total distance of 21 miles. The gradients on this line, which has a gauge of 2 feet, range as high as 1 in 27, while the radius of some of the curves is as low as 1¼ chains. An additional length of 8 miles has been surveyed with a view to extending the line. (*c*) *The Mount Garnet Railway.* This line also branches from the Chillagoe railway at Lappa Junction, and runs for a distance of 33 miles, as far as Mount Garnet.

(ii.) *Shire Tramways.* Under Part XV. of the Local Authorities Act of 1902 provision is made whereby not less than one-third of the ratepayers in any district may petition the local authority to apply to the Governor for the constitution of a tramway area. The Governor may define the area and may also approve of the plans and specifications of the proposed tramway. The amount which may be advanced by the Government for the construction or purchase of a tramway may not exceed a sum equal to £3000 for every mile of its length. As regards repayment of loans, no sum need be paid during the first three years, but after the expiration of that period the principal and interest must be repaid by half-yearly instalments on the basis provided for by the "Local Works Loans Act 1880 to 1899." For the purpose of raising the money to pay these instalments the local authority may levy a rate upon all ratable property within the tramway area. The money required for the tramway may be raised by the local authorities by the issue of debentures.

6. **South Australia.**—In this State there are no private railways open for general traffic. The only private line is that owned by the Broken Hill Proprietary Company, running from Iron Knob to the seaboard near the head of Spencer's Gulf, a distance of 58 miles. The line is utilised for the carriage of flux for use in connection with the smelting works at Port Pirie.

7. **Western Australia.**—Owing to the Government's past difficulty in constructing lines urgently required for the development of the country, private enterprise was encouraged to undertake the work of construction on the land-grant principle, and two trunk lines were thus constructed. The greater part of the private lines now open, however, have been constructed in connection with the timber industry. (i.) *The Midland Railway.* This line is 277 miles in length, and runs from the Midland Junction, ten miles from Perth, to Walkaway, where it joins the Government line running to Geraldton. It was constructed under a concession of 12,000 acres of land per mile of line constructed, to be selected along the entire route of the railway. (ii.) *The Great Southern Railway.* This line, which was built by private enterprise under the land-grant system, is 243 miles in length, and was acquired by the Government by purchase on the 1st January, 1897. The total price paid, with all the interests of the private company and of the original concessionaire, was £1,100,000, which was divided by the Government for book-keeping purposes into £300,000 for the land and £800,000 for the railway. (iii.) *Millar's Karri and Jarrah Company's Lines.* These lines have mostly been built under special timber concessions and leases. There were, at the end of the year 1909, in all seven lines situated in various parts of the State extending into the bush, whence logs are brought to the mills. At the end of 1909 the total length of these lines was 245 miles. (iv.) *Other Lines.* There are also a number of other lines in various parts of the State used chiefly in connection with the timber industry. These are specified in the tabular statement on page 740.

8. **Tasmania.**—In this State there are three private lines open for general traffic. They are all situated in the western part of the island.

(i.) *The Emu Bay Railway Company.* The lines owned by this company run from Burnie to Waratah, from Guildford to Zeehan, and from Rayna to Dundas, and have a total length of 103 miles.

(ii.) *The Mount Lyell Mining and Railway Company.* The Mount Lyell railway runs from Regatta Point, Strahan, to Queenstown, and the North Mount Lyell line from

Kelly Basin to Linda. The former line, 22 miles in length, was constructed in 1895-6, while the latter line, 30 miles long, was taken over from the North Mount Lyell Copper Company on the amalgamation of the two companies in 1903. The line from Kelly Basin to Linda is now run only intermittently.

(iii.) *The Magnet Silver Mining Company's Railway.* This line runs from Magnet Junction, near Waratah, on the Emu Bay Company's line to Magnet, a distance of 10 miles.

9. **Operations of Private Railways, 1909.**—The tabular statement given below shews particulars, so far as returns are available, for the year 1909 of all private railways open to the public for general traffic in the Commonwealth :—

PARTICULARS OF PRIVATE RAILWAYS OPEN FOR GENERAL TRAFFIC, 1909.

Line.	Miles Open.	Capital Cost.	Gross Revenue.	Expenses.		Train Miles.	Passenger Journeys.	Tons of Goods, etc.	No. of Employees.	Rolling Stock.		
				Working.	Interest, etc.					Locos.	Coaches.	Wagons.
	No.	£	£	£	£	No.	No. ,000.	Tons. ,000.	No.	No.	No.	No.
NEW SOUTH WALES.												
Deniliquin-Moama	45	162,672	16,993	9,537	703	35,878	15	27	49	4	6	63
Silverton Tramway	36	410,785	136,243	54,788	...	124,797	38	788	254	16	17	578
East Greta Railway	8	112,584	19,360	10,402	5,629	256,031	511	37	199	14	29	24
Seaham Colliery Co.	6	16,000	1,352	*	*	5,980	20	6	9	2	†	†
New Redhead Co. ...	8	83,500	4,214	1,523	2,817	*	*	*	13	†	†	†
Hexham-Minmi ...	6	*	1,150	853	...	11,536	14	4	12	3	5	...
Cwlth. Oil Corp'r'n	32	180,367	*	*	*	26,430	2	13	50	4	2	25
Total ¶ ...	141	965,908	179,312	77,103	9,149	460,652	600	875	586	43	59	690
VICTORIA.												
Kerang-Koondrook	14	29,213	3,895	1,199	1,153	20,000	10	*	10	2	1	6
QUEENSLAND.												
Chillagoe Railway	103	410,543	82,146	25,734	...	117,544	37	136	105	8	2	148
Stannary Hills ...	21	63,390	6,783	6,947	3,833	30,402	5	34	10	3	2	76
Mount Garnet ...	33	100,000	3,175	3,066	...	11,394	4	3	12	1	1	4
Ayr Tramway ...	44	80,367	14,656	3,540	3,942	21,750	24	26	15	†	†	†
Beaudesert ...	22	58,467	6,230	3,069	2,927	17,650	12	13‡	20	1	3	†
Cairns-Mulgrave ...	42	127,527	15,440	10,161	5,584	55,511	63	92	56	5	7	125
Douglas-Mossman...	16	33,367	4,948	3,316	1,340	12,500	9	2	15	2	3	24
Ingham Tramway...	18	28,696	2,538	389	1,407	*	10	*	*	*	3	*
‖ Cattle Ck. and McGregor's Ck. T'way	13	21,990	2,292	1,447	859	5,034	12	22	8	1	3	22
Geraldton Tramway	20	49,938	4,500	2,353	2,387	21,953	5	24	15	2	2	21
Mt. Molloy ,,	20	46,891	3,437	2,346	...	9,389	2	5	10	1	1	8
Total ¶... ...	352	1021 676	146,145	62,368	22,279	303,127	183	357	266	24	27	428
WESTERN AUSTRALIA.												
Midland Railway ...	277	*	108,931	59,516	*	401,838	54	68§	297	10	10	190
TASMANIA.												
Emu Bay Railway...	103	600,873	58,533	25,673	20,000	142,686	30	80	105	9	10	134
Mt. Lyell Railway...	22	216,086	32,503	20,119	...	50,104	31	126	73	7	8	119
Nth. Mt. Lyell Rly.	30	316,638	2,276	4,957	...	6,860	4	7	17	4	3	56
Magnet Railway ...	10	20,101	...	1,984	...	7,300	*	*	8	3	1	4
Total ¶ ...	165	1153 698	93.312	52,733	20,000	206,950	65	213	203	23	22	313
Total for Cwlth. ¶	949	3170 495	531,595	252,919	52,581	1392 567	912	1,513	1,362	102	119	1,627

* Not available. † Government rolling-stock used. ‡ Exclusive of 4,045 head of live stock § Exclusive of 176,840 head of live stock. ¶ Incomplete. ‖ This line was taken over by the Government on 1st July, 1910.

§ 3. Tramways.

1. **General.**—Tramway systems are in operation in all the States of the Commonwealth, and in recent years considerable progress has been made in the adoption of electrical traction, the benefit of which is now enjoyed by a number of the principal towns of the Commonwealth.

There are also in many parts of Australia private tramway lines which are used for special purposes, usually in connection with the timber, mining, or milling industries. Though efforts have been made to collect particulars of these lines, the returns are generally too incomplete for publication.

(i.) *Total Mileage Open and Classification of Lines.* The following table shews the total mileage of tramway lines open for general passenger traffic in each State and in the Commonwealth at the end of the year 1909-10, classified (*a*) according to the motive power utilised and (*b*) according to the nature of the authority by which the lines are controlled :—

TRAMWAYS.—CLASSIFICATION OF MILEAGE OPEN FOR PASSENGER TRAFFIC, 1909-10.

Nature of Motive Power and Controlling Authority.	N.S. Wales.	Victoria.	Q'land.	South Australia.	Western Australia.	Tas.	C'wealth.
ACCORDING TO MOTIVE POWER.							
	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
Electric ...	112	40	31	30	53	9	275
Steam ...	58	1	...	3	...	...	62
Cable ...	...	46	...	...	...	...	46
Horse ...	...	13	...	23	23	...	59
Total	170	100	31	56	76	9	442
ACCORDING TO CONTROLLING AUTHORITY.							
Government ...	166	5	...	20	23	...	213
Municipal	...	...	...	30	...	...	30
Private	4	95	31	6	53	9	199
Total	170	100	31	56	76	9	442

2. **New South Wales.**—In this State the tramways, with but few comparatively unimportant exceptions, are the property of the Government, and are under the control of the Railway Commissioners.

(i.) *Government Tramways.* In Sydney and suburbs the Government tramways are divided into distinct systems. There were in June, 1910, five such systems in operation within the metropolitan area, the most important being the city and suburban lines—94 miles in length (160½ miles single track)—and the North Shore line—16¾ miles in length (24 miles single track). Both of these systems are now operated by electricity. There are four systems on which the motive power used is steam, namely—(*a*) the line

from Ashfield to Mortlake and Cabarita, 8½ miles long, (*b*) from Kogarah to Sans Souci, 5½ miles in length, (*c*) from Manly to Brookvale, 3½ miles long, and (*d*) from Arncliffe to Bexley, 2½ miles long. There are also Government steam tramways in operation at Newcastle, Broken Hill, Parramatta, and from East to West Maitland.

(*a*) *Sydney Tramways.* The first tramway constructed in Sydney ran from Bridge-street to Hay-street *via* Hunter-street. It was opened in September, 1879, and the motive power was steam. In the following few years these steam tramways were considerably extended. The electric system was not introduced into the city until the close of the year 1899, though it had at that time been in operation for some years in North Sydney. The tramways in the heart of the city, running along King-street to the suburb of Woollahra, as well as those in North Sydney, were originally worked by underground cables, and have since been converted into electric lines on the overhead trolley system. In December, 1899, the electric tramway, extending from the Circular Quay along George-street to the Redfern Station, and thence to the densely-populated district of Pyrmont, was opened for traffic. This tramway is a double track, and is 3¼ miles in length. Single lines have been constructed along Castlereagh and Pitt streets, with the object of relieving the traffic along George-street. The whole of the steam tramways in Sydney and suburbs, with the exception of the Ashfield-Mortlake, the Kogarah-Sans Souci, the Manly lines, and the Arncliff-Bexley, have now been converted into electric lines, and provision for the extra power required for the electrification of the first two of these lines has been made at the central station.

(*b*) *Other Tramway Systems.* In Newcastle the first section of the tramways, from Perkins-street to Plattsburg, was opened in 1887; the total length open on the 30th June, 1910, was 17 miles. At Broken Hill and Parramatta the first sections of the tramways were opened in 1902. On the 30th June, 1910, the mileage open at Broken Hill amounted to 9, and at Parramatta to 4½ miles. The line from East to West Maitland, 4 miles long, was opened in February, 1909. There are also three short lengths of tramways in New South Wales run by private companies. Further particulars are given below.

(*c*) *Particulars of all Government Tramways, 1901 to 1910.* The following table shews the total length, the capital cost, the gross revenue, working expenses, and net earnings, and the percentages of working expenses on gross revenue, and of net earnings on capital cost, for each financial year from 1900-1 to 1909-10 inclusive.

NEW SOUTH WALES.—PARTICULARS OF WORKING OF GOVERNMENT TRAMWAYS, 1901 to 1910.

Year ended the 30th June.	Total Length of Lines Open.	Capital Expended on Lines Open.	Gross Revenue.	Working Expenses.	Net Earnings.	Percentage of Working Expenses on Gross Revenue.	Percentage of Net Earnings on Capital Cost.
	Miles.	£	£	£	£	per cent.	per cent.
1901 ...	79¼	2,194,493	551,674	462,471	89,203	83.83	4.07
1902 ...	104	2,829,363	631,757	541,984	89,773	85.79	3.19
1903 ...	124½	3,371,587	752,034	654,165	97,869	86.98	2.90
1904 ...	125½	3,471,759	802,985	673,625	129,360	83.89	3.73
1905 ...	125¾	3,637,922	813,569	685,682	127,887	84.28	3.51
1906 ...	126	3,669,096	851,483	665,083	186,400	78.11	5.08
1907 ...	128¾	3,669,524	908,701	727,947	180,754	80.11	4.92
1908 ...	132¾	3,732,991	1,011,994	809,065	202,929	79.95	5.44
1909 ...	151½	4,252,731	1,097,565	875,560	222,005	79.77	5.61
1910 ...	165½	4,668,797*	1,185,568	983,587	201,981	82.96	4.33

* £47,455 of this sum has been paid from the Consolidated Revenue, and no interest is payable thereon.

The net result, after providing for all working expenses and £156,102 for interest on the capital invested, was a surplus of £45,879 in 1909-10, as compared with £79,174 in the preceding year. During the year 1909-10, 201,151,021 passengers were carried without any accident resulting in loss of life to any of the passengers.

(*d*) *Particulars of Different Systems of Government Tramways, 1909-10.* In the subjoined statement particulars are given of the working of the electric and steam tramways in Sydney, and of the other Government tramways at Newcastle, Broken Hill, Parramatta, and Maitland :—

NEW SOUTH WALES.—PARTICULARS OF THE WORKING OF THE VARIOUS GOVERNMENT TRAMWAYS, 1909-10.

Particulars.	Sydney and Suburbs.			Newcastle. (Steam.)	Broken Hill. (Steam.)	Parramatta. (Steam.)	East to West Maitland (Steam).	Total.
	Electric.	Steam.	Total.					
Length ...miles	111	20	131	17	9	4½	4	165½
Total cost ... £	4,235,170	111,889	4,347,059	189,945	74,046	25,625	32,122	4,668,797
Gross revenue £	1,092,582	16,350	1,108,932	53,432	15,278	3,300	4,626	1,185,568
Working expenses £	888,415	20,879	909,294	49,513	18,048	2,983	3,749	983,587
Interest ... £	141,624	3,341	144,965	6,646	2,493	906	1,092	156,102
Profit or loss* £	+62,543	—7,870	+54,673	—2,727	—5,263	—589	—215	+45,879

* The positive sign indicates a profit, the negative a loss.

The total capital cost shewn in the preceding table was made up as follows :—

CAPITAL COST OF NEW SOUTH WALES GOVERNMENT TRAMWAYS, AS AT 30th JUNE, 1910.

Permanent Way.	Rolling Stock	Power-house, Sub-stations, and Plant.	Machinery.	Workshops.	Furniture.	Total.
£2,633,644	£976,669	£896,753	£43,623	£115,716	£2,392	£4,668,797

The average cost per mile open was £15,892 for permanent way and £12,281 for all other charges, making a total of £28,173 per mile.

During the year 1909-10, twelve new extensions, amounting in all to a length of 14¾ miles, were opened for traffic. On the 30th June, 1910, six extensions having a total length of 21½ miles were under construction, and up to the same date ten additional extensions, amounting to about 7 miles, had been authorised for construction.

(*e*) *Sydney Electric Tramways.* The total route mileage of the city and suburban lines is 94, and of the North Shore line 16¾ miles, making the total length of the electric tramways in Sydney 110¾ miles. The current for the operation of these tramways is generated at the power-house at Ultimo, which has been erected at a total cost of £896,753, including the cost of the sub-stations and plant. The current generated at the power-house is partly continuous and partly alternating, and is used both for lighting and traction purposes. The standard voltage of the continuous current is 600; the alternating current is transmitted by means of high-tension cables to sub-stations, where it is converted to continuous current at the standard voltage. The total output of the power-house, for both lighting and traction purposes, during the year 1909-10, was 56,462,781 kilowatt-hours, of which the direct-current supply was 13,933,062, and the alternating current 42,529,719 kilowatt-hours. The output for traction purposes only was 45,500,128 kilowatt-hours. The following table gives particulars of the working of the electric tramways for each financial year from 1901 to 1910, inclusive :—

NEW SOUTH WALES.—PARTICULARS OF SYDNEY ELECTRIC TRAMWAYS, 1901-1910.

Year ended 30th June.	Mileage Open for Traffic (Track).	Total Cost of Construction and Equipment.	Gross Revenue.	Working Expenses.	Net Revenue.
	Miles.	£	£	£	£
1901	44½	1,017,321	258,161	201,149	57,012
1902	52	1,285,014	340,742	257,557	83,185
1903	113	2,610,287	560,693	420,718	139,975
1904	118¾	2,715,748	670,603	515,043	155,560
1905	133¾	3,124,140	705,132	559,565	145,567
1906	139	3,259,936	780,986	569,566	211,420
1907	141½	3,247,817	830,497	629,108	201,389
1908	146¼*	3,288,480	925,224	735,442	189,782
1909	169½	3,756,198	1,009,498	785,404†	224,094
1910	183½	4,235,170	1,092,582	888,415	204,167

Year ended 30th June.	Output of Power-house for Traction Purposes.	Tram Miles Run.	Passengers Carried.	Number of Cars in Use.	Number of Persons Employed.
	Kilowatt-hours ,000	No. ,000.	No. ,000.		
1901	10,043	3,993	49,069	337	2,173
1902	15,472	6,175	63,517	436	2,855
1903	25,542	11,184	100,341	629	3,745
1904	30,866	14,383	116,312	626	3,873
1905	30,197	14,783	122,626	682	4,069
1906	32,316	15,352	135,300	735	3,863
1907	33,941	15,631	144,038	727	4,044
1908	37,422	16,517	159,723	775	4,714
1909	42,299	17,813	173,733	906	5,514
1910	45,500	19,394	187,574	939	6,065

* 103¾ route miles. † Including £50,500 written off for depreciation, etc.

The net revenue on capital invested was 4.82 per cent. in 1909-10 as against 5.97 per cent. in the preceding year.

(ii.) *Private Tramways.* There are three private tramway lines in New South Wales open for general traffic. (*a*) There is an electric tramway running from Rockdale to Brighton-le-Sands, a distance of one and a-quarter miles. This line was originally opened as a steam tramway in 1885, but was subsequently converted into electric. The total cost to the end of 1909 was £13,000. During that year the number of tram-miles run was 32,000. (*b*) A private steam tramway passes through the township of Parramatta. Commencing at the park gates, it runs as far as the Duck River, a distance of 2¾ miles, where it connects with the Parramatta River steamers, conveying passengers and goods to and from Sydney. This line was opened for traffic in 1883. In 1909 the number of tram miles run was about 17,520, and the number of passengers conveyed about 67,700. (*c*) Another steam tramway runs between Fassifern and Toronto, on Lake Macquarie, a distance of two and three-quarter miles, and was first opened in 1891. This line was taken over by the Railway Commissioners in August, 1910.

Particulars regarding private tramways used for special purposes are not available.

(iii.) *Sydney Harbour Ferries.* As the ferry services on the waters of Port Jackson are mainly subsidiary to the suburban railway and tramway systems, it has been thought advisable to include them here rather than under shipping. Returns for the year 1909 were received from five companies, and shew that these companies had 62 boats in commission which were licensed to carry a total of 106,114 passengers, or an average of 1711 per boat and per trip. The total number of passengers carried during the year is stated as 24,729,807, an average of over 67,000 per day. In addition to the ordinary passenger traffic there are two lines providing for vehicular traffic, and thus affording the only rapid means of transit between the city and the northern suburbs.

The five companies employed during the year a total of 735 persons. The capital expenditure to the end of 1909 amounted to £114,762, the gross revenue during 1909 to £223,741, and the expenditure to £143,721, thus giving a net revenue of £80,020. The services are well managed, and the boats constructed during recent years—double-ended screwboats—are claimed to be superior in size and equipment to boats employed on similar service in any part of the world.

3. **Victoria.**—In Melbourne there is a number of tramway systems carried on under the control of various authorities, the most important being the cable system worked by the Melbourne Tramway and Omnibus Company. There are also three lines of electric tramways, one running from St. Kilda to Brighton, a distance of five and one-eighth miles, belonging to the Government, and under the control of the Railway Commissioners; one from Flemington Bridge to the Saltwater River and Keilor Road, a distance of seven and a-quarter miles, is run by a private company; and one from Prahran to Malvern, four and a-half miles in length, controlled by a joint municipal trust. There is also a private cable tramway, two and a-quarter miles in length, between Clifton Hill and Preston. Two private tramways worked by horses—one, seven miles in length, running from Sandringham to Cheltenham via Beaumaris, the other, one and a-half miles long, from Brunswick to Coburg, are owned privately, while three similar ones are worked by the Melbourne Tramway and Omnibus Company, viz., Victoria Bridge to Kew, Richmond Bridge to Hawthorn, and the Zoological Gardens lines. There is a short steam tramway, about one mile long, at Sorrento. There are also systems of electric tramways at Ballarat and Bendigo, constructed and run by a private company. A number of tramways has been constructed for special purposes in various parts of the State under the provisions of the Tramway Act 1890. The work of constructing electric tramways at Geelong was commenced in January, 1911.

(i.) *Melbourne Cable Tramways.* The Melbourne Omnibus Company began its services by the initiation of omnibus services in 1869, and in 1878 the company changed its name to the Melbourne Tramway and Omnibus Company, with a view to the introduction of a tramway system in the city and suburbs of Melbourne. It was not, however, until the year 1883, when the Melbourne Tramway and Omnibus Company's Act was passed, that the necessary authority was given by Parliament for that purpose. Under this Act the company was empowered to construct tramways in the streets of Melbourne and suburbs, with the consent of the municipalities interested, who had the option of electing to construct the tramways themselves. All the municipalities decided to exercise the option conferred upon them, and, according to the provisions of the Act, a Tramways Trust was formed. This body, which is composed of seven members from the Melbourne City Council and one member each from the councils of eleven of the surrounding municipalities, received full power to construct tramways, and to borrow money for that purpose, secured on the municipal properties and revenues and on the tramways themselves. The Trust raised sufficient funds to pay for the construction of the tramway tracks and the engine-houses from which the cables are worked. It was required by the original Act, as amended in 1892, to complete the tramways by the end of the year 1893, and to grant a thirty-two years' lease of the tramways to the company, dating from the 1st July, 1884—when the liability for interest on the loans commenced—and expiring on the 1st July, 1916. The company is required to find sufficient capital to build the rolling-stock and to equip the lines and engine-houses with all necessary working requisites. The company pays to the Trust annually the interest due upon the loans raised, and also a sufficient sum as a sinking or redemption fund, to repay by its accumulation the principal of the loans raised by the Trust, and at the expiration of the lease must hand back the lines in good working order to the Trust. The expenses of the Trust were paid out of the loan up to the end of the year 1903, but since that date have been paid by the company to an amount not exceeding £1000 per annum, the municipalities being liable for the remainder. The total amount the Trust was empowered to borrow was £1,650,000, which has been raised in London by means of debentures bearing interest at 4½ per cent. The premiums received amounted to £55,794,

making a total of £1,705,794. This amount had been expended by the end of the year 1893, when further loan expenditure ceased. The first line—that to Richmond—was opened to traffic in November, 1885, and the work being rapidly pushed on, the others were opened at short intervals, and the whole system was completed in 1891. The complete system consists of forty-three and a-half miles of double-track cable lines, using constantly over ninety miles of wire rope, and four and a-half miles of double-track horse lines.

(*a*) *Particulars of Working, 1901 to 1910.* The subjoined statement shews the tram mileage, the number of passengers carried, and the revenue and expenditure for each year ended the 30th June from 1901 to 1910 inclusive:—

MELBOURNE CABLE TRAMWAYS.—PARTICULARS OF WORKING, 1901 to 1910.

Year ended the 30th June.	Tram Mileage.	Number of Passengers Carried.	Revenue.			Working Expenses.			
			Traffic Rec'pts.	Other.*	Total.*	Wages.	Repairs & Maintenance.	Other.*	Total.*
	No.	No.	£	£	£	£	£	£	£
1901	8,964,734	47,195,647	465,427	18,025	483,452	122,014	80,006	60,480	262,500
1902	9,226,883	47,261,572	454,683	20,152	474,835	125,596	68,689	75,269	269,554
1903	9,044,282	46,832,910	432,505	30,040	462,545	127,746	60,611	56,569	244,926
1904	8,968,928	49,183,742	444,495	28,781	473,276	124,050	71,612	45,928	241,590
1905	8,932,073	50,297,357	448,740	31,066	479,806	123,803	62,177	48,395	234,375
1906	9,032,523	52,925,654	469,079	59,861	528,940	125,390	59,361	47,395	232,146
1907	9,536,397	59,069,280	507,206	39,274	546,480	140,487	69,736	54,445	264,668
1908	9,810,808	63,954,512	545,269	40,561	585,830	153,040	64,993	60,606	278,639
1909	9,856,345	66,522,463	565,601	43,059	608,660	162,093	69,681	64,516	296,290
1910	10,010,975	68,695,853	581,390	45,307	626,697	162,956	78,022	63,540	304,518

* Including amounts on account of omnibus lines.

It may be noted that the "Wages" item in the above table does not represent all that is paid in wages by the company, as a considerable portion is merged in the item "Repairs and maintenance." The figures under working expenses classed as "Other" comprise feed, fuel, licenses, rates, insurance, law costs, stationery and office expenses, salaries of staff, and directors' and auditors' fees.

(ii.) *Electric Tramways.* There are in Melbourne three electric tramway systems, namely (*a*) the St. Kilda-Brighton line, (*b*) the North Melbourne tramways, and (*c*) the Prahran-Malvern lines.

(*a*) *The St. Kilda-Brighton Line.* Under the St. Kilda and Brighton Electric Street Railways Act 1904 the Board of Land and Works was authorised to construct a tramway from St. Kilda to Brighton. The amount of interest payable on the cost of the land acquired for the tramway was guaranteed by the municipalities of St. Kilda and Brighton for a period of twenty years, and authority was given by the Act to the municipalities to levy either a general or special rate not exceeding one shilling in the pound for the purpose of paying the guarantee. The profit, if any, during the first twenty years is to be set off in reduction of the guarantee. The line was opened for traffic in May, 1906, and the extension to Brighton Beach was opened in the following year. A proposal has been made to extend the line along the foreshore as far as Mordialloc. The total capital cost to the 30th June, 1910, exclusive of rolling-stock, was £43,052, and of rolling-stock was £15,560, making a total of £58,612. The subjoined statement gives particulars of the working of this line for the financial years ended the 30th June, 1907 to 1910:—

ST. KILDA-BRIGHTON ELECTRIC STREET TRAMWAY, 1907 to 1910.

Year ended 30th June.	Mileage Open.	Car Mileage.	Passengers Carried.	Gross Revenue.	Working Expenses.	Interest.	Net Loss.
				£	£	£	£
1907	5.13	303,777	1,030,242	9,590	17,392*	1,980	9,782
1908	5.13	335,007	1,146,484	10,374	14,299†	2,140	6,065
1909	5.13	338,214	1,265,492	10,941	9,075	2,038	172
1910	5.13	340,254	1,361,925	11,885	9,860	2,092	67

* Including an amount of £9941 for replacement of rolling stock, car-shed and equipment destroyed by fire. † Including an amount of £3311 for replacement of rolling-stock, etc., caused by fire.

The average fare paid per passenger was 2.08 pence in 1909-10 as against 2.06 pence in 1908-9. The gross revenue in 1909-10 was 8.38 pence per passenger car mile and £2316.76 per mile of track open. In the same year the percentage of working expenses on gross revenue was 82.96 as against 82.94 in the preceding year.

(*b*) *The North Melbourne Tramways*, extending through the northern suburbs to the Saltwater River and to Keilor Road, were constructed by a private company, and were opened for traffic towards the end of the year 1906.

(*c*) *The Prahran-Malvern Tramway.* This line has been constructed under the control of a trust, which consists of five members appointed by the city of Prahran and the town of Malvern. The total track mileage (including double track 2¼ miles) is 7⅛ miles, the estimated total capital cost being £90,000. The current is supplied by the Melbourne Electric Supply Company Limited at a price varying according to the consumption of current and the price of fuel. Any surplus revenue, after providing for operating expenses, interest, sinking fund, and renewal reserve, is to be paid to the municipalities of Prahran and Malvern in proportion to the car mileage run in their respective districts. The lines were opened for traffic on 31st May, 1910. From that date to 30th September, 1910, the number of tram miles run was approximately 415,668, the number of passengers carried was 2,867,889, the gross revenue £20,806, and the working expenses (excluding interest and renewals reserve) £15,301. The number of cars in use was 13, and the number of persons employed 70.

(*d*) *The Ballarat and Bendigo Electric Tramways* are under the control of a private company, and run along the main streets and to and from the outlying suburbs of the two towns. The total length of lines open for traffic is 22 miles.

(*e*) *Particulars of Working of all Electric Tramways, 1904 to 1910.* The following table gives particulars of the working of all electric tramways in Victoria for each year from 1904 to 1910 inclusive :—

VICTORIA.—PARTICULARS OF WORKING OF ELECTRIC TRAMWAYS, 1904 to 1910.

Year.	Current Generated for Traction Purposes at Central Stations.	Mileage Open for Traffic.	Total Cost of Construction and Equipment.	Gross Revenue.	Working Expenses.	Tram Miles Run.	Number of Passengers Carried.	Number of Cars in Use.	Number of Employees.
	Kilowatt-hrs. (000 omitted.)	Miles.	£	£	£	No. (000 omitted.)	No. (000 omitted.)	No.	No.
1904	331	10½	106,553	†	†	326	1,214	12	55
1905	463	10½	115,309	†	†	433	1,749	12	86
1906	703	23⅝	191,882	†	†	699	2,759	53	210
1907	1,790	34	222,486*	48,554*	34,522*	1,793	7,037	78	379
1908	1,562*	34½	272,180*	69,296	55,740	1,963	7,519	95	338
1909	2,185	34½	290,815	66,148	50,820	1,904	7,497	95	312
1910‡	2,314	34½	275,458*	54,727*	40,087*	1,930	7,889	97	317

* Incomplete. † Not available. ‡ Exclusive of Prahran-Malvern Tramway, which was opened for traffic on 31st May, 1910.

(iii.) *Private Tramways for Special Purposes.* There are in Victoria a number of tramways used for special purposes, chiefly in connection with the timber, mining, and milling industries. These lines have been constructed either under authority of the Department of Public Works, pursuant to Section 36 of the Tramway Act 1890, or under leases or licenses issued by the Department of Lands and Survey, pursuant to Sections 144 and 145 of the Land Act 1901. Particulars of these lines are too incomplete for publication.

4. **Queensland.**—In this State there is a system of electric tramways running through the streets of the city and suburbs of Brisbane and controlled by a private company which has its head office in London. The total length of the Brisbane system was thirty and

three-quarter miles at the end of the year 1910. There is also a number of tramways, having a total length of about 640 miles, run in connection with sugar mills. Particulars of Shire tramways have been given in the part of this section dealing with private railways (see pp. 746 and 747).

(i.) *Brisbane Electric Tramways.* These tramways are run on the overhead trolley system, the voltage of the line current being 550. The total cost of construction and equipment to the end of the year 1909 was approximately £1,250,000. It is understood that certain extensions of the system at an early date are contemplated. The following table gives particulars of these tramways for each calendar year from 1901 to 1910, inclusive:—

QUEENSLAND.—BRISBANE ELECTRIC TRAMWAYS, PARTICULARS OF WORKING, 1901 to 1910.

Year.	Current Generated.	Mileage Open for Traffic.	Tram Miles Run.	Number of Passengers Carried.	Gross Revenue.	Working Expenses.	No. of Cars in Use.	Number of Persons Employed
	Kilowatt-hrs.	Miles.	No.	No.	£	£	No.	No.
1901...	3,192,955	21	2,756,443	16,183,801	111,483	64,710	79	375
1902...	3,852,308	24½	3,015,548	18,125,302	125,451	73,473	88	390
1903...	3,975,355	27	3,157,574	18,376,000	126,526	77,539	100	400
1904...	4,154,797	29	3,243,686	18,452,704	126,647	76,586	104	430
1905...	4,561,780	30¾	3,323,823	20,049,978	128,436	78,918	106	485
1906...	4,370,004	30¾	3,323,657	22,052,424	141,414	78,493	107	550
1907...	*	30¾	3,330,011	24,251,329	158,298	*	107	*
1908...	4,915,202	30¾	3,367,972	27,221,466	177,567	*	107	619
1909...	5,099,663	30¾	3,321,803	29,732,338	192,371	*	*	614
1910...	5,441,032	30¾	3,524,036	32,419,276	214,265	*	119	654

* Not available.

(ii.) *Sugar-Mill Tramways.* There is a number of tramways in various parts of Queensland used in connection with the sugar-milling industry, chiefly for the purpose of hauling cane to the mills. Some of these lines are of a permanent nature, running through sugar-cane plantations, while others are portable lines running to various farms. At the end of the year 1908, there were 28 sugar-mills running tramways. The total mileage was 640, of which 460 miles were steam and 180 miles horse tramways.

5. **South Australia.**—Up to the year 1906 there was a number of horse tramways in the principal streets of Adelaide and suburbs run by various private companies. Power to acquire part of these lines, with a view to their electrification, was given to the Adelaide Corporation by the Municipal Tramways Trust Act 1906. In accordance with the provisions of the Act, a Trust consisting of eight members, of whom two were nominated by the Governor, two elected by the City Corporation, and two each by the Suburban Corporations and the District Councils, was formed in 1907, and a length of forty-nine route miles of horse traction tramways was purchased from the private companies at a cost of £283,357. On the 9th March, 1909, the electric car system was inaugurated on the Kensington route. At the end of July, 1910, a length of 29½ route miles had been electrified and opened for traffic; the corresponding length of track opened was 53¼ miles. The power-house is located at Port Adelaide, nine miles from the city. It is equipped with three 1500-kilowatt turbo-alternators generating current at 11,000 volts, which are stepped down and passed through rotary converters to direct current at 600 volts. The cost of construction of the whole undertaking when complete will be approximately £750,000. There are also in South Australia nineteen and three-quarter miles of Government horse tramways in country districts, worked in connection with the railway system,

and six miles of private tramways used for passenger service. The subjoined statement gives various particulars of these lines:—

SOUTH AUSTRALIA.—PARTICULARS OF HORSE TRAMWAYS, 1910.

Particulars.	Length.	Gauge.	Nature of Traffic.
	GOVERNMENT TRAMWAYS.		
	Miles.	ft. in.	
Moonta, Moonta Bay, and Hamley Flat	5⅕	5 3	Passengers and goods.
Gawler	1⅛	5 3	,, ,,
Victor Harbour and Breakwater ...	1	5 3	,, ,,
Dry Creek and Magazine	1	2 0	Explosives.
Magazine and Broad Creek	1½	2 0	,,
Port Broughton and Mundoora ...	10	3 6	Passengers and goods.
	PRIVATE TRAMWAYS.		
Port Adelaide and Alberton	2¼	5 3	Passengers.
Glenelg and Brighton	3¾	4 3½	,,

6. **Western Australia.**—In this State there are a number of horse tramways, amounting in all to a length of twenty-three miles, which are the property of the Government. Of these the most important is the line between Roeburne and Cossack, constructed on a 2 ft. gauge and under the control of the Colonial Secretary's Department. The length of this line is eight and a-half miles. The remaining fourteen and a-half miles belonging to the Government are made up of eleven short lengths varying from eight chains to four and a-half miles, worked in connection with the jetties at various ports for the purpose of providing the necessary communication between such jetties and the goods sheds or warehouses. Most of these short lines are leased at annual rentals, and they are under the supervision of the Harbour Master. Their maintenance and improvement is in the hands of the Public Works Department. In addition to these Government lines there are electric tramway systems at Perth and Kalgoorlie carried on by private companies, and at Fremantle, under municipal control.

(i.) *Government Tramways.* Particulars as to the working of the Government horse-tramways or as to the rents received therefrom are not generally available. The following statement, however, shews particulars of the working of the Roeburne-Cossack line for the financial year ended the 30th June, 1909:—

WESTERN AUSTRALIAN GOVERNMENT TRAMWAYS.—PARTICULARS OF THE ROEBURNE-COSSACK LINE, 1908-9.

Mileage Open.	Cost of Construction and Equipment.	Gross Earnings.	Working Expenses.	Interest.	Loss.
8½	£24,827	£1,595	1,728	£864	£997

The total loss on the working of this line since its inception to 30th June, 1909, amounted to £22,468.

(ii.) *Electric Tramways.* There are now five towns in Western Australia which enjoy the benefits of electric tramway systems, namely, Perth, Fremantle, Kalgoorlie, Boulder City, and Leonora.

(*a*) *The Perth Electric Tramways* were opened for traffic by a private company in 1899, and the system has since been extended to many of the outlying suburbs. On the 31st December, 1909, there were 22 miles of line open, the total cost of construction and equipment to that date being £474,275. Two small extensions in North Perth amounting to one mile in length, have been opened since the end of 1909.

(*b*) *The Kalgoorlie and Boulder City Tramways* are also run by a private company, the first line being opened in 1902. At the beginning of 1904 legislative authority was given for the construction of lines in Boulder City and suburbs, and in November, 1904, the last section of the Boulder system was completed. At the end of the year 1909 the total mileage of the whole system—in Kalgoorlie and Boulder City—amounted to 19 miles, the total cost of construction and equipment being approximately £448,840.

(*c*) *The Fremantle Tramways* were opened in November, 1905, under the control of the municipality. On the 31st August, 1910, there were 8¾ miles of line open for traffic, the cost of construction and equipment at that date being £95,432.

(*d*) *The Leonora-Gwalia Tramway*, three miles in length, formerly a steam tramway, was opened for traffic by electrification on 5th October, 1908.

(*e*) *Particulars of Working of all Electric Tramways, 1901 to 1909.* The subjoined table shews, so far as returns are available, particulars of the working of all electric tramway systems in the State for each year from 1901 to 1909 inclusive:—

WESTERN AUSTRALIA.—PARTICULARS OF ELECTRIC TRAMWAYS, 1901 to 1909.

Year.	Current Generated.	Mileage Open for Traffic.¶	Total Cost of Construction and Equipment.	Tram Miles Run.	Number of Passengers Carried.	Gross Revenue.	Working Expenses.	No. of Cars in Use.	No. of Persons Employed.
	Kilowatt-hrs.	Miles.	£	No.	No.	£	£	No.	No.
1901	...	16½	367,037	721,056	...	46,270	26,673	30	...
1902	...	17	380,861	788,120	...	56,157	32,464	30	...
1903	*1,561,804	36¼	§	1,396,888	8,226,926	99,794	68,567	59	†70
1904	*1,831,385	42	§	1,590,925	9,833,212	118,269	69,586	62	266
‖1905	*2,695,277	54	§	2,190,988	12,861,664	147,455	91,006	89	373
1906	*3,076,810	54½	§	2,325,378	13,595,098	152,678	92,379	89	336
1907	4,049,980	45¼	§	2,247,889	14,050,086	143,403	89,266	89	330
1908	4,065,616	47½	968,567	2,316,325	13,136,065	142,182	91,770	89	354
1909	3,952,386	50	1,018,548	2,304,616	13,579,603	144,320	98,236	101	366

* Exclusive of Kalgoorlie tramways, for which returns are not available. † Exclusive of Perth tramways. § Not available. ‖ Including returns for the Fremantle tramways for a period of ten months ended the 31st August, 1906, at which date the municipal financial year ends. ¶ For the years 1907 to 1909, inclusive, miles of route are given; for previous years the figures represent miles of single track.

7. **Tasmania.**—In Hobart there is a system of electric tramways, amounting in all to a length of nine miles, owned by a private company. Under the authority of the Launceston Tramway Act of 1906 the Launceston City Council entered into an agreement with a private company for the construction of a system of electric tramways in the city and suburbs of Launceston. The agreement provided that the company was to run the tramways for a period of twenty-five years, when the Council could purchase the lines and stock at cost price; the electric power required was to be supplied by the Council. This agreement, however, lapsed, and the Council is now constructing the tramways, and will run them as a municipal undertaking. The route mileage of the system will be about 5½ miles, and will be opened for traffic about the middle of 1911.

(i.) *Hobart Electric Tramways.* These tramways were opened for traffic in 1893, the total cost of construction and equipment to the 31st December, 1909, being £90,824. The following table gives particulars of the working of this system for each year from 1901 to 1909, inclusive:—

TASMANIA.—PARTICULARS OF WORKING OF HOBART ELECTRIC TRAMWAYS, 1901-9.

Year.	Current Generated.	Mileage Open for Traffic.	Tram Miles Run.	Number of Passengers Carried.	Gross Revenue.	Working Expenses.	Number of Cars in Use.	Number of Persons Employed.
	Kilowatt-hours	Miles.	No.	No.	£	£	No.	No.
1901 ...	...	9	321,633	1,734,120	16,097	11,735	20	90
1902 ...	...	9	321,533	1,848,104	17,319	11,820	20	90
1903 ...	...	9	332,986	1,962,617	18,326	11,106	21	91
1904 ...	378,857	9	330,451	2,045,629	19,855	10,906	21	94
1905 ...	455,833	9	332,135	2,327,448	20,560	11,260	22	111
1906 ...	460,315	9	341,638	2,199,759	20,261	10,968	23	110
1907 ...	607,324	9	445,505	2,504,773	24,421	13,635	22	102
1908 ...	622,207	9	453,773	2,677,018	26,789	14,446	23	105
1909 ...	748,878	9	490,410	2,772,047	27,502	15,682	25	105

8. **Electrical Traction in Commonwealth, 1909-10.**—The subjoined table gives particulars of electric tramways for each State and the Commonwealth. The returns for Tasmania, for the Ballarat and Bendigo tramways in Victoria, for the Rockdale-Brighton-le-Sands in New South Wales, and for the Perth and Kalgoorlie tramways in Western Australia, are for the calendar year 1909; for the Brisbane tramways the returns are for the calendar year 1910; and for other tramways the returns are, generally, for the financial year 1909-10:—

ELECTRIC TRAMWAYS IN COMMONWEALTH, 1909-10.

State.	Current Generated.	Mileage (Route) open for Traffic.	Tram Miles Run.	No. of Passengers Carried.	Capital Cost.	Gross Revenue.	Working Expenses.	No. of Cars, Motors, and Trail'rs	No. of Employees
	Kilowatt-hours (,000 omitted).	Miles.	No. (,000 omitted).	No. (,000 omitted).	£	£	£	No.	No.
N.S.W. ...	45,611	112	19,426	187,537*	4,248,170	1,094,861	890,822	946	6,074
Victoria‡ ...	2,314	39	1,930	7,889	275,458*	54,727*	40,087*	97	317
Queensland ...	5,441	31	3,524	32,419	†	214,265	†	119	654
South Australia	4,227	29	2,839	23,647	866,732	168,818	*123,445	100	778
West. Australia	3,952	50	2,304	13,580	1,018,548	144,320	98,236	101	366
Tasmania ...	749	9	490	2,772	90,824	27,502	15,682	25	105
Commonwealth	62,294	270	30,513	267,844	6,499,732*	1,704,493	1,168,272*	1,388	8,294

* Incomplete. † Not available. ‡ Exclusive of Prahran-Malvern Tramway, which was opened for Traffic on 31st May, 1910.

SECTION XVIII.

POSTS, TELEGRAPHS, AND TELEPHONES.

§ 1. Posts.

1. **The Commonwealth Postal Department.**—Under the provisions of section 51 of the Commonwealth Constitution Act the Commonwealth Parliament was empowered to make laws with respect to the control of the postal, telegraphic, and telephonic services in Australia, and by proclamation, made under section 69 of the same Act, the six separate State Post and Telegraph Departments were amalgamated and taken over by the Federal Executive on the 1st March, 1901. On the 1st December following, the Commonwealth Post and Telegraph Act 1901 came into operation, and the provisions of the various State Acts referring to the postal and telegraphic services thereby ceased to apply; it was, however, specially provided by the Act of 1901 that all regulations in force and all rates and charges levied under any State Act should continue in force and be applied in the same manner as if such State Act were not affected by the Commonwealth Act. The administration of the Act of 1901 was placed in the hands of a Postmaster-General, a responsible Minister with Cabinet rank, and of a Secretary having chief control of the Department throughout the Commonwealth under the Postmaster-General, whilst a principal officer in each State was provided for under the style of Deputy Postmaster-General. The rates and charges levied in each State for the transmission of letters, telegrams, and postal articles at the date of Federation remained in force until the Post and Telegraph Rates Act came into operation on the 1st November, 1902. This Act secured uniformity throughout the Commonwealth in the rates charged for the conveyance of newspapers by post, and for the transmission of telegrams, but did not alter the charges made in the individual States for the transmission of letters, cards, parcels, and packets. Uniform postage rates will, however, exist in all the States when the Postal Rates Act of 1910 comes into force. (See paragraph 8 hereof.)

2. **Postal Services in Early Days.**—The first Australian office for postal purposes was established in Sydney by Lieutenant-Governor Paterson under a Government order dated the 25th April, 1809, and the site selected was in High-street (now known as George-street) at the residence of Mr. Isaac Nicholls. The duties of this office were extended in June, 1810, by Governor Macquarie, who established it as a regular post office, at which all parcels and letters, either colonial or foreign, were to be deposited previous to their distribution. After the establishment of this office in Sydney very little improvement in regard to postal matters took place for a number of years, and it was not until 1825 that an Act was passed by Sir Thomas Brisbane, with the advice of the Council, "to regulate the postage of letters in New South Wales." A proclamation under this Act was issued, fixing the rates of postage and the salaries and allowances of postmasters, and inviting tenders for the conveyance of mails between Sydney and Parramatta, Windsor and Liverpool; between Liverpool and Campbelltown; from Parramatta to Emu Plains, and thence to Bathurst. It was not, however, until 1828 that the provisions of the Act were put into full force and a system of general post-office communication was established. In that year rates of postage were fixed, depending

upon the distance and the difficulty of transmission. The lowest single inland rate was threepence and the highest one shilling, the postage on a letter increasing according to its weight, the minimum fee being charged on letters not exceeding a quarter of an ounce. The fee for newspapers was one penny. Letters from New South Wales to Van Diemen's Land were charged threepence each, while other letters by ship were charged fourpence each single rate, and sixpence for any weight in excess. The Act of 1825 was amended by the Postal Act of 1835, under which the Governor was authorised to establish a General Post Office in Sydney, and to make rules and regulations, and to fix rates for the conveyance of letters and parcels. In 1837 a post office was established in Melbourne, and a fortnightly service was established between that city and Sydney. In the same year stamps were introduced in the form of stamped covers or wrappers, which are said to have been the first postage stamps ever used. Post offices were established and a postal service was organised in the other States of the Commonwealth shortly after their settlement, and a tolerably good overland service by horses and mail coaches soon developed between the capitals and the up-country towns, villages, and stations as settlement progressed.

3. **Development of Postal Services.**—In the early days mails were conveyed along the main roads by coaches, built after the style of the old-fashioned English mail coaches; after the discovery of gold, in 1851, coaches built on the model of the Mexican estafeta gradually supplanted the old style. Mails were despatched at night and were delivered with greater rapidity until they were finally sent by railway. The history of the post office in Australia, subsequent to the discovery of gold, has been one of great progress and improvement.

(i.) *Number of Post Offices, Letters and Postcards, and Newspapers, 1841 to 1909.* The number of post offices open in each State and in the Commonwealth at decennial periods since 1841, and at the end of the years 1907, 1908, and 1909 is given in the subjoined table, which also shews, for the same years, the total number (in thousands) of letters and postcards dealt with, and the number per 100 of the population, as well as the total number (in thousands) of newspapers dealt with, and the number per 100 of the population in each State and in the Commonwealth. The true total number of letters and postcards and of newspapers dealt with is not obtained by merely adding the figures of the several States together, since interstate letters are counted both in the State from which they are despatched and in that in which they are received for delivery. A second total is therefore given, excluding such interstate excess, obtained by subtracting from the first total for all the States half the sum of the number of interstate letters despatched and received in each of the States.

DEVELOPMENT OF POSTAL SERVICES, 1841 to 1909.

Year.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Commonwealth.	C'wealth (excluding Interstate Excess).
NUMBER OF POST OFFICES, 31ST DECEMBER, 1841 TO 1909.								
1841 ...	56	3	*	...	...	†43	102	...
1851 ...	101	44	*	72	...	51	268	...
1861 ...	340	369	23	160	14	100	1,006	...
1871 ...	570	706	81	286	39	†144	1,826	...
1881 ...	973	1,158	141	488	52	206	3,018	...
1891 ...	1,384	1,729	307	629	86	328	4,463	...
1901 ...	1,684	1,637	411	699	187	376	4,994	...
1907 ...	1,809	1,656	480	704	298	375	5,322	...
1908 ...	1,842	1,633	499	686	320	378	5,358	...
1909 ...	1,884	1,642	522	631	331	377	5,387	...

DEVELOPMENT OF POSTAL SERVICES, 1841 TO 1909.—(Continued).

Year.	New South Wales.	Victoria.	Queensland.‖	South Australia.	Western Australia.	Tasmania.	Commonwealth.	C'wealth (excluding Interstate Excess).
NUMBERS OF LETTERS AND POSTCARDS DEALT WITH. (,000 OMITTED.)								
1841 ...	720	56	*	...	...	...	...	...
1851 ...	975	504	*	364	...	...	...	...
1861 ...	4,370	6,110	515	1,540	193	836	13,564	12,844
1871 ...	7,510	11,716	1,793	3,163	‡669	1,189	26,040	24,382
1881 ...	26,356	26,308	5,178	10,759	995	2,682	72,278	67,640
1891 ...	54,154	§62,527	15,346	17,836	3,193	5,852	168,908	157,297
1901 ...	82,783	82,599	23,270	21,395	17,451	11,173	238,671	220,177
1907 ...	137,229	122,508	36,006	28,364	24,653	14,911	363,671	332,301
1908 ...	149,654	128,986	40,363	27,132	25,614	15,323	387,072	354,718
1909 ...	151,570	133,601	45,299	31,551	26,059	16,297	404,377	372,501
NUMBERS OF LETTERS AND POSTCARDS DEALT WITH PER 100 OF POPULATION.								
1841 ...	617	483	*	...	...	...	...	...
1851 ...	495	652	*	548	...	...	...	...
1861 ...	1,237	1,132	1,651	1,228	1,240	929	1,175	1,113
1871 ...	1,478	1,590	1,489	1,712	‡2,668	1,175	1,553	1,454
1881 ...	3,445	3,024	2,286	3,885	3,372	2,304	3,164	2,961
1891 ...	5,616	§5,460	3,870	5,548	6,414	3,929	5,270	4,907
1901 ...	6,033	6,821	4,813	5,840	9,306	6,436	6,237	5,758
1907 ...	8,848	9,904	6,638	7,329	9,329	8,433	8,746	7,991
1908 ...	9,402	10,250	7,347	6,815	9,663	8,431	9,053	8,297
1909 ...	9,346	10,251	7,910	7,584	9,526	8,722	9,245	8,516
NUMBER OF NEWSPAPERS DEALT WITH. (,000 OMITTED.)								
1841 ...	1,126	120	*	...	...	...	...	..
1851 ...	762	456	*	517	...	...	...	...
1861 ...	3,384	4,277	427	1,089	138	896	10,211	9,603
1871 ...	3,992	5,173	1,307	2,213	‡352	1,136	14,173	13,336
1881 ...	16,528	11,441	4,530	5,927	715	2,345	41,486	38,063
1891 ...	42,517	§22,729	11,896	8,883	1,666	5,376	93,067	85,280
1901 ...	52,318	26,297	12,805	9,573	7,975	7,440	116,408	102,727
1907 ...	48,341	30,960	19,214	7,713	9,419	10,707	126,354	106,187
1908 ...	50,461	31,890	20,445	7,843	9,505	12,113	132,257	110,574
1909 ...	56,003	32,294	22,057	8,599	9,962	12,818	142,033	120,224
NUMBER OF NEWSPAPERS DEALT WITH PER 100 OF THE POPULATION.								
1841 ...	965	1,024	*	...	...	...	...	...
1851 ...	386	590	*	778	...	...	...	...
1861 ...	958	792	1,370	868	882	995	885	832
1871 ...	786	702	1,086	1,198	‡1,407	1,122	845	795
1881 ...	2,160	1,315	2,000	2,140	2,423	2,015	1,816	1,666
1891 ...	3,722	§1,985	3,000	2,763	3,346	3,609	2,904	2,661
1901 ...	3,813	2,172	2,538	2,617	4,253	4,285	3,042	2,685
1907 ...	3,117	2,503	3,543	1,993	3,564	6,056	3,038	2,553
1908 ...	3,171	2,509	3,721	1,970	3,586	6,665	3,094	2,587
1909 ...	3,453	2,478	3,852	2,139	3,642	6,860	3,247	2,749

* Included in New South Wales. † In 1884. ‡ In 1872. § In 1890. ‖ The figures up to and including the year 1901 are partly estimated.

4. **Interstate and Oversea Postages for whole Commonwealth, 1901 to 1909.**—In the preceding tables is shewn only the *total number* of letters and postcards, newspapers, parcels and packets dealt with—*i.e.*, despatched and received—by the Postal Department in each State, regardless of the place from which they are despatched or of the place at which they are received for delivery. In the following table the matter dealt with is divided into (i.) matter posted in the Commonwealth for delivery within the Commonwealth, (ii.) matter received from places outside the Commonwealth, and (iii.) matter despatched to places outside the Commonwealth.

INTERSTATE AND OVERSEA POSTAGES FOR WHOLE COMMONWEALTH, 1901 TO 1909.

Year.	Letters and Postcards.	Newspapers.	Parcels.	Packets.
POSTED FOR DELIVERY WITHIN THE COMMONWEALTH (,000 OMITTED).				
1901	209,530	92,383	1,253	36,395
1902	230,554	87,468	1,339	36,783
1903	232,174	78,503	1,515	35,659
1904	243,169	82,011	1,641	38,897
1905	270,767	82,205	1,807	45,466
1906	296,433	91,589	1,998	49,095
1907	309,069	92,223	2,363	64,784
1908	326,162	96,359	2,508	68,569
1909	347,594	107,516	2,761	76,348
OVERSEA RECEIVED (,000 OMITTED).				
1901	5,682	7,283	81	2,876
1902	6,342	7,342	86	3,181
1903	6,292	7,115	90	2,821
1904	7,863	7,495	99	3,258
1905	9,689	8,195	94	3,536
1906	9,814	7,973	106	2,688
1907	9,541	8,753	119	3,498
1908	13,309*	8,446	107	4,124
1909	14,092	9,438	106	3,327
OVERSEA DESPATCHED (,000 OMITTED).				
1901	4,945	3,055	35	1,319
1902	5,072	3,440	44	1,371
1903	6,024	4,449	47	1,463
1904	7,147	4,649	50	1,974
1905	8,552	4,790	54	2,170
1906	10,394	4,860	60	2,169
1907	10,894	5,548	64	2,356
1908	10,624	5,400	68	2,191
1909	11,279	5,712	70	2,406

* The increase is partly due to the fact that in New South Wales the method of counting was different in previous years.

5. **Interstate and Oversea Postages for each State, 1909.**—The following table shews separately for each State the postage matter dealt with in 1909 under the same classification adopted in the preceding paragraph :—

INTERSTATE AND OVERSEA POSTAGES FOR EACH STATE, 1909.

State.	Letters and Postcards.	Newspapers.	Parcels.	Packets.
POSTED FOR DELIVERY WITHIN COMMONWEALTH (,000 OMITTED).				
New South Wales ...	132,702	48,046	1,349	34,331
Victoria	116,857	23,003	508	13,677
Queensland ...	37,318	15,317	528	11,673
South Australia ...	26,957	6,188	159	10,760
Western Australia ...	21,202	5,925	166	2,979
Tasmania... ...	12,558	9,037	51	2,928
Commonwealth...	347,594	107,516	2,761	76,348

INTERSTATE AND OVERSEA POSTAGES FOR EACH STATE, 1909.—(Continued).

State.	Letters and Postcards.	Newspapers.	Parcels.	Packets.
OVERSEA RECEIVED (,000 OMITTED).				
New South Wales ...	5,975	2,337	31	900
Victoria	4,116	3,527	31	1,176
Queensland ...	1,682	1,468	17	508
South Australia ...	806	908	10	15
Western Australia ...	1,067	694	13	394
Tasmania	446	504	4	334
Commonwealth...	14,092	9,438	106	3,327
OVERSEA DESPATCHED (,000 OMITTED).				
New South Wales ...	4,525	2,433	32	1,167
Victoria	3,160	2,333	19	980
Queensland ...	935	316	6	79
South Australia ...	833	168	5	77
Western Australia ...	951	174	6	45
Tasmania	875	288	2	58
Commonwealth...	11,279	5,712	70	2,406

6. **Postal Business at Capital Cities.**—The following tables shew the number and class of articles posted and received at the chief post-offices in each of the States of the Commonwealth during the year 1909:—

POSTAL BUSINESS OF THE CAPITAL CITIES IN EACH STATE, 1909.

City.	Letters.	Newspapers.	Packets.	Parcels.
NUMBER OF ARTICLES POSTED.				
Sydney	55,811,907	31,492,032	26,196,448	805,362
Melbourne	64,649,393	16,578,674	8,876,078	244,125
Brisbane	13,659,174	6,426,798	4,873,434	237,769
Adelaide	19,972,650	7,837,794	1,509,132	133,828
Perth	9,300,029	2,797,730	1,167,983	121,806
Hobart	4,804,526	2,192,768	921,210	14,528
NUMBER OF ARTICLES RECEIVED FOR DELIVERY.				
Sydney	34,279,026	16,597,683	7,817,982	153,851
Melbourne	*	*	*	*
Brisbane	11,403,031	3,319,451	2,292,988	231,879
Adelaide	11,427,354	3,046,314	1,525,500	104,124
Perth	7,879,170	2,531,819	1,828,489	43,042
Hobart	2,793,934	1,286,555	655,860	14,190

* Not available.

7. **Postal Facilities, 1909.**—The subjoined statement shews the number of post and receiving offices, the area in square miles and the number of inhabitants to each post office (including receiving offices) in each State and in the Commonwealth at the end of the year 1909. It will be observed that the most sparsely populated States have the greatest number of offices in comparison with their population, but in order to judge the

relative extension of postal facilities the area of country to each office must also be taken into account.

SQUARE MILES OF TERRITORY AND NUMBER OF INHABITANTS TO EACH POST AND RECEIVING OFFICE, 1909.

State.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Cwlth.
Number of post and receiving offices...	2,397	2,370	1,378	723	413	417	7,698
Number of square miles of territory to each post office in State	129	37	487	1,250	2,363	63	386
Number of inhabitants to each office...	677	550	416	575	662	448	568
Number of inhabitants per 100 sq. miles	522	148	85	46	28	713	147

8. **Rates of Postage.**—The charges made for the postage of newspapers and parcels, and of interstate and foreign letters, are the same in all the States of the Commonwealth. The rates for the transmission of inland letters, however, are not uniform, the Post and Telegraph Act 1901 having specially provided that the rates and charges levied in any State should continue in force. The last-mentioned regulation, however, was repealed by the Postal Rates Act of 1910, which will come into force on a date—not later than 1st May, 1911—to be fixed by proclamation.

The following rates on letters, newspapers, and other postal articles posted in the Commonwealth for delivery therein will be in force after the date of proclamation of the operation of the Postal Rates Act of 1910 :—

POSTAL RATES OF ARTICLES POSTED IN THE COMMONWEALTH FOR DELIVERY THEREIN AFTER APRIL, 1911.

Postal Articles.	Rates of Postage.
LETTERS	1d. per ½ ounce.
LETTER-CARDS	Single, 1d. each. Reply, 1d. each half.
POST CARDS	Single, 1d. each. Reply, 1d. each half.
PRINTED PAPERS AS PRESCRIBED	½d. per 2 ounces or part of 2 ounces.
BOOKS PRINTED OUTSIDE AUSTRALIA ...	½d. per 4 ounces or part of 4 ounces.
BOOKS PRINTED IN AUSTRALIA	½d. per 8 ounces or part of 8 ounces.
MAGAZINES.—That is to say—	
(*a*) magazines, reviews, serials, and other similar publications printed and published in Australia in numbers at intervals not exceeding three months	½d. per 8 ounces or part of 8 ounces.
(*b*) magazines, reviews, serials, and other similar publications (including newspapers) printed and published outside Australia in numbers at intervals not exceeding three months ...	½d. per 4 ounces or part of 4 ounces.
HANSARD.—That is, reports of Parliamentary Debates printed and published by the authority of the Commonwealth or of a State	½d. per 12 ounces or part of 12 ounces.
COMMERCIAL PAPERS, PATTERNS, SAMPLES, AND MERCHANDISE AS PRESCRIBED ...	1d. per 2 ounces or part of 2 ounces.
NEWSPAPERS (without condition as to the number contained in each addressed wrapper) posted by registered newspaper proprietors, or by newsvendors, or returned by an agent or newsvendor to the publishing office	1d. per 20 ounces on the aggregate weight of newspapers so posted by any one person at any one time.
ALL OTHER NEWSPAPERS	For each newspaper, ½d. per 10 ounces or part of 10 ounces.

Whilst the bookkeeping sections of the Constitution Act (see Section XIX., § 1, hereinafter) were in force, each State had necessarily to use its own postage stamps, and stamps sold in one State were only allowed to be used on letters posted in that State. The necessity for this arrangement disappeared with the change in the keeping of the Commonwealth accounts, and since the 14th October, 1910, stamps of any State can be affixed to letters, irrespective of the State in which they are posted. With the object of issuing a uniform postage stamp for the Commonwealth, the Postmaster-General has called for designs for a stamp which must contain characteristic features of Australia.

(i) *Letters.* The rates as mentioned hereunder will be, in some cases, altered when the rates specified in the preceding table come into force. At present the inland letter postage is at the rate of one penny per half-ounce on town and twopence per half-ounce on country letters throughout the Commonwealth, except in the States of Victoria and South Australia. In Victoria the charge made is one penny per half-ounce, and in South Australia twopence per half-ounce, on all letters posted for delivery within the State. In Victoria the minimum charge was altered in 1890 from twopence per ounce to one penny per half-ounce, but the diminution in revenue at that time was so great that in 1892 the rate was again raised to twopence per ounce; on the 1st April, 1901, it was once more reduced to one penny per half-ounce under the provisions of an Act passed in December, 1900. In New South Wales the town rate of one penny per half-ounce, which is now in force in the metropolitan suburban district, is also in operation within a twelve-mile radius of Newcastle, and a thirteen-mile radius of the majority of the other principal country towns. In Queensland the present town rate extends to all places within a radius of eleven miles from the General Post Office at Brisbane, and also includes all letters to be delivered from the same office at which they were posted. In Western Australia and Tasmania the existing town rates have effect within a radius of thirteen miles from the General Post Offices at Perth and Hobart respectively, and in other towns and suburbs within a radius depending upon their population. The postage to the United Kingdom was reduced in January, 1891, from sixpence per half-ounce *via* the Red Sea, and fourpence *via* the Cape of Good Hope, to the uniform rate of twopence halfpenny. In 1891 the States were represented at the Congress of the Universal Postal Union held in Vienna, and on the 4th July a convention was signed on their behalf, by which they joined the Union from the 1st October of that year. On that date the rate of postage to all British possessions and to foreign countries included in the Union was reduced to twopence halfpenny. The present charge for postage of interstate letters and of letters to the United Kingdom and to British possessions is now uniformly twopence per half-ounce throughout the Commonwealth; the rate on letters to foreign countries and to other places is twopence half-penny for each half-ounce.

(ii.) *Newspapers.* The different rates charged for the carriage of newspapers in the various States, prior to Federation, continued after the control of the Postal Departments had been taken over by the Commonwealth, until the 1st November, 1902, when a uniform rate was imposed by the Post and Telegraph Rates Act 1902. At present the rates on all newspapers posted for delivery within the Commonwealth (without condition as to the number contained in each addressed wrapper posted) by registered newspaper proprietors, or by newsvendors, or returned by newsvendor or agent to the publishing office, is one penny per twenty ounces on the aggregate weight. On all other registered newspapers posted within the Commonwealth for delivery therein the charge is a halfpenny per ten ounces for each newspaper. At the end of the year 1909 there were in all 1649 publications registered in the Commonwealth under section 29 of the Post and Telegraph Act 1901 for transmission by post as newspapers. The charge on postage of registered newspapers for transmission to the United Kingdom is one penny for each newspaper not exceeding eight ounces in weight by the ordinary route, and one penny for each newspaper not exceeding sixteen ounces in weight by the All Sea Route. To other parts of the world the rate is one penny up to four ounces, and a halfpenny for every additional two ounces. Newspapers which are not registered are charged at the same rates as other printed papers.

(iii.) *Parcels.* Parcels may not exceed 11 lbs. in weight, 3 ft. 6 in. in length, or 6 ft. in length and girth combined. The rate for the inland postage of parcels is sixpence up to 1 lb., and then threepence for every additional pound. For interstate transmission the rate is eightpence up to 1 lb., and then sixpence per lb., and for transmission to the United Kingdom the rate is one shilling up to 1 lb., and sixpence for every additional pound.

(iv.) *Packets.* The regulations for the conveyance of packets vary in the several States. The ordinary rate is one penny for each two ounces. Packets must not as a rule exceed 2 ft. in length, 1 ft. in breadth or depth; or, if in a roll, 2 ft. 6 in. in length. Special rates are allowed for the conveyance of commercial papers, patterns, samples, etc.

9. **Registered Letters.**—Under section 38 of the Post and Telegraph Act 1901 provision is made for the registration of any letter, packet, or newspaper upon payment of the prescribed fee, and any person who sends a registered article by post may obtain an acknowledgment of its due receipt by the person to whom it is addressed by paying the prescribed fee (see hereunder) in advance at the time of registration in addition to the registration fee.

(i.) *Registration Fees.* The fee payable upon registration of an article is threepence, and the fee payable in order to obtain an acknowledgment of the delivery of the registered article is twopence halfpenny in addition. Registered letters must, as a rule, be handed in at least half-an-hour before the closing of the mails.

(ii.) *Number of Registered Letters Posted, 1909.* The subjoined table shews the number of registered letters posted in each State during the year 1909, classified according to the places to which they were despatched for delivery:—

NUMBER OF REGISTERED LETTERS POSTED DURING 1909.

(,000 OMITTED.)

State.	Posted in each State for Delivery within that State.	Posted in each State for Delivery in other States.	Posted in each State for Delivery in Places outside the C'wealth.	Total.
New South Wales	694	70	49	813
Victoria	792	87	49	928
Queensland	384	46	22	452
South Australia	178	28	9	215
Western Australia	271	35	21	327
Tasmania	183	13	5	201
Commonwealth ...	2,502	279	155	2,936

10. **Ocean Mail Services.**—Regular steamship communication between Australia and Europe was established in 1852 by a service run by the Peninsular and Oriental Company between Singapore and Sydney, *via* King George's Sound, Adelaide, and Melbourne. This service was inaugurated in September, 1852, by the arrival at Melbourne of the "Chusan," and was continued until 1854, when it was stopped in consequence of the Crimean War; in 1856 a line of steamers was again started, and the service was carried

on by the Peninsular and Oriental Company, in conjunction with the Royal Mail Company, for some years.

(i.) *Mail Route via San Francisco.* The service *via* the Red Sea did not at that time give much satisfaction to the public, and was looked upon with a certain amount of disfavour in New South Wales and New Zealand. The effect was to stimulate the colonists to agitate for an improved service, and proposals were made for the establishment of a line of mail packets from Sydney to Panama *via* Wellington, by rail across the isthmus, and thence to Great Britain. The result was that in 1866 the line was started, and continued in operation until the end of 1868, when it was terminated through the failure of the company by which it had been carried out. The completion of the railway across the American continent in 1869, with its western terminus at San Francisco, opened up a new and agreeable route, and in that year a monthly service was inaugurated by the Union Steamship Company, in conjunction with the Pacific Steamship Company, from Sydney to San Francisco *via* Auckland. This service was subsidised to the extent of £37,000 per annum, of which New South Wales paid £25,750 and New Zealand £11,250, and was continued until November, 1890, when a new contract was entered into and the amount of the subsidy largely reduced, the amount of the contribution being based upon the weight of mail matter carried. Various extensions of the contract were made, but the last agreement made between the New Zealand Government and the Oceanic Steamship Company of San Francisco expired on the 10th November, 1906, and has not since been renewed. From that date mails were carried at Postal Union rates until the 12th April, 1907, when the service was discontinued.

(ii.) *Route via Suez Canal.* The establishment of a mail route *via* America had the effect of stimulating the steamship owners who were engaged in the service *via* Suez, and from that time there was a marked improvement in the steamers, as well as in the punctuality and speed with which the mails were delivered. The Peninsular and Oriental Company have, with very few interruptions, carried mails from the Australian States almost from the inception of the ocean steam service. Towards the end of 1878, the Orient-Pacific Company commenced carrying mails between Australia and the United Kingdom, and has continued to do so ever since. New contracts were entered into with the Peninsular and Oriental and the Orient-Pacific Companies for a weekly service, subsidised by the Imperial Government and by all the States of Australia, to commence on the 1st February, 1898, for a period of seven years. The total amount of the subsidy was £170,000 per annum, of which £98,000 was payable by the Imperial Government and £72,000 by the Australian States in proportion to their population. These contracts expired on the 31st January, 1905, and pending negotiations for a new contract the mails were carried at poundage rates. On the 1st February, 1905, the Peninsular and Oriental Company commenced its eighth Australian contract with the British Postmaster-General on behalf of the Imperial Post Office only, and in connection with the India and China mail services, one payment being arranged for the whole service, and the Commonwealth Government not, as hitherto, being a party to the contract. Mails are still carried from Australia by the Peninsular and Oriental Company, but are carried at Postal Union rates and not under contract with the Commonwealth. On the 25th April, 1905, the Orient-Pacific Company concluded a new contract with the Commonwealth Government for a fortnightly service between England and Australia. The subsidy was at the rate of £124,880 per annum. This contract has now been replaced by the new mail contract referred to in the next sub-section hereof. Fremantle has, since the year 1900, been the first and last port of call for the mail steamers to Europe, in lieu of Albany, the original port of call; the Peninsular and Oriental and Orient-Pacific Companies' steamers sail alternately conveying the weekly homeward and outward mails.

(*a*) *The New Mail Contract.* On the 1st January, 1906, tenders were invited by the Commonwealth Postmaster-General for a fortnightly mail service between Adelaide and Brindisi, to alternate with a similar service to be provided by the Imperial Government, and a contract was entered into with Sir James Laing and Company Limited, providing for a service at an annual subsidy of £125,000. This contract, however, fell through, and new tenders were accordingly called for. On the 15th November, 1907, an agreement was entered into with the Orient Steam Navigation Company Limited providing for a fortnightly service for a period of ten years, commencing in February, 1910. The mail service is to be carried out by existing vessels belonging to the company and by five new mail ships, which have been specially built, and which are each over 12,000 tons gross registered tonnage and of not less than seventeen knots speed. Two more new vessels are to be added within eighteen months and six years respectively from February, 1910. The vessels are to call at Fremantle, Adelaide, Melbourne, Sydney, and Brisbane, and at least six of them at Hobart during the months of February to May inclusive. The voyage from Taranto to Adelaide is to be completed within twenty-six days fourteen hours, and from Adelaide to Taranto within twenty-seven days two hours, but the latter period may be exceeded by thirty-six hours during the prevalence of the south-west monsoon. The amount of the subsidy is fixed at £170,000 per annum; but, if the earnings of the company be decreased, or the expenses increased, by reason of any Commonwealth shipping legislation passed subsequently to the date of the agreement, to the extent of not less than £5000 a year, the contractors have the right to terminate the agreement unless the subsidy is increased. Insulated space of not less than 2000 tons of forty cubic feet is to be provided in each of the new vessels, and the freights are not to exceed one halfpenny per lb. for butter and sixty shillings per ton for fruit. White labour only is to be employed, and no discrimination is to be made between unionists and non-unionists. If before or during the sixth year of the period of the contract an accelerated service is provided by any competing line of mail ships, the contractors must, if so required by the Postmaster-General, provide a service equal to the competing service, at an increased subsidy, to be determined by agreement or arbitration. The Commonwealth flag must be flown on the mail ships, which the Commonwealth has the right to purchase at a valuation at any time. Within six months of the Postmaster-General establishing a permanent wireless telegraphy station at Rottnest Island, or at any point on the coast between Fremantle and Brisbane, the company must fit the mail ships with wireless telegraphy installations. The new service was inaugurated on the 11th February, 1910.

(*b*) *French and German Subsidised Mail Services.* Vessels belonging to the Messageries Maritimes and the Norddeutscher Lloyd, which are under contract respectively with the French and German Governments to convey mails monthly between Marseilles and New Caledonia and between Bremen and Sydney, *via* Genoa, also carry mails for the Commonwealth Government from Australia to Europe at Postal Union rates. The Messageries Maritimes service commenced in November, 1882; the amount of the annual subsidy granted by the French Government is £120,000. The first contract for the establishment and maintenance of a mail steamship line between Germany and Australia was made between the Imperial German Government and the Norddeutscher Lloyd in 1885, and the service was inaugurated in July, 1886, with the steamer "Salier."

(iii.) *Route via Vancouver and Canadian-Pacific Railway.* During the year 1893 a direct monthly service was started between Sydney and Vancouver, in British Columbia, *via* Wellington, in New Zealand, and thence to Liverpool *via* the Canadian-Pacific Railway, the New South Wales Government paying an annual subsidy of £10,000 for the maintenance of this service for a period of three years. In 1896 the agreement was renewed for a further period of three years, and in 1899 was again renewed for four years, subject to the same terms and conditions, except that the route was *via* Brisbane instead of Wellington. The contract was further extended, at an

increased subsidy, from time to time until the 31st July, 1910, at a subsidy of £26,626 per annum, pending the receipt of tenders for an improved and accelerated service.

(iv.) *Other Ocean Mail Services.* In addition to the mails *via* the Suez Canal and *via* Vancouver a number of other services, both regular and irregular, are maintained between the Commonwealth and various parts of the world, and also between the principal ports in the various States and a number of small ports in the less settled parts of the Commonwealth which are inaccessible by rail. The following statement gives a summary, in so far as returns are available, of all mail services maintained between the Commonwealth and other countries and between ports in the Commonwealth. The amounts of subsidies specified are the amounts payable per annum unless otherwise stated.

SUMMARY OF MAIL SERVICES, COMMONWEALTH OF AUSTRALIA, 30th JUNE, 1910.

Description of Service.	Frequency of Service.	Ports between which Service is maintained.	Particulars regarding Subsidies.
1. *To and from Europe, via Suez*—			
(a) Peninsular and Oriental* ...	Fortnightly	Adelaide, Fremantle and London, *via* Brindisi and Marseilles	Subsidised by Imperial Govt. Mails from Aust. at Postal Union rates
(b) Orient-Pacific*	,,	Adelaide, Fremantle & London, *via* Taranto	Subsidised. Date of agreement, 15th Nov., 1907. Term from Feb., 1910. Amt. of subsidy £170,000. Subsidy paid by all States on a *per capita* basis.
(c) Messageries Maritimes	13 voyages yearly	New Caledonia and Marseilles, *via* Fremantle and Adelaide	Subsidised by French Govt. Mails from Aust. at Postal Union rates.
(d) Norddeutscher Lloyd	,,	Fremantle, Adelaide & Bremen, *via* Genoa	Subsidised by German Govt. Mails from Aust. at Postal Union rates.
2. *To and from Europe, via Vancouver*†			
Canadian Australian Steamship Co.	Monthly	Sydney and Vancouver, B.C., *via* Brisbane, Fiji, Honolulu, and once every eight weeks to Fanning Island	Subsidised by agreement dated 31st July, 1907, for two years, extended to 31st July, 1911. Amount of subsidy, £26,626. Subsidy paid by all States on a *per capita* basis.‡
3. *To and from New Zealand*—			
(a) Conjointly by Union S.S. Co. and Huddart, Parker Proprietary	Weekly	Sydney, Melbourne, Hobart, Bluff, Dunedin, Christchurch and Wellington	Poundage rates.
(b) Do. do. do. ...	,,	Sydney, Hobart, and Auckland	,, ,,
(c) Conjointly by Shaw, Savill and Albion Co. & N.Z. Shipping Co.	Fortnightly	Hobart, Bluff, Dunedin, and Wellington	,, ,,
(d) Other Steamers	Irregularly, when convenient	Sydney, Wellington, Auckland, and Lyttelton	,, ,,
4. *To and from ports in N.S. Wales*—			
(i.) Northern Ports—			
(a) North Coast S.N. Co. ...	Twice weekly	Sydney, Manning River, Port Macquarie, Macleay, Nambucca, Bellinger Rivers, Coffs Harbour, Clarence River, Byron Bay, and Richmond River	Poundage rates.
(b) Cain's Co-Operative S.S. Co....	Weekly	Sydney & Port Macquarie	,, ,,
(ii.) South Coast Ports—			
Illawarra and S. Coast S.N. Co....	Twice weekly	Sydney, Eden, Bega and Tathra	,, ,,

* Mails carried also to India *via* Colombo. † Carries also mails to Canada and the United States. ‡ A new agreement for a service from New Zealand to Vancouver has been entered into. The matter of extending this service to Australian ports is under the consideration of the Commonwealth Government.

SUMMARY OF MAIL SERVICES.—(Continued.)

Description of Service.	Frequency of Service.	Ports between which Service is maintained.	Particulars regarding Subsidies.
5. *To and from Northern Ports of Qld.*—			
(a) Australian United Steam Navigation Co.	Weekly	Brisbane, Gladstone, Townsville, Cairns, Mourilyan, Innisfail, Pt. Douglas & Cookt'n	Subsidised by agreement dated 29th Nov., 1905, for five years, and one year's extension. Amount of subsidy, £18,450.
(b) Do. do. do. ...	Once every three weeks	Brisbane, Normanton & Burketown, *via* Townsville, Cooktown, and Thursday Island	Subsidised by agreement dated 16th January, 1906, for five years, extended for one year. Amount of subsidy, £6000. Subsidies under 5 (a) and (b) paid by Queensland.
(c) Other steamers	Irregularly, when convenient	Various...	Poundage rates.
6. *To and from Ports in S. Australia*—			
(i.) NORTHERN TERRITORY—			
(a) The Eastern and Ausn., and the China Navigation Co.'s	Irregularly	To and from Adelaide, Melb'rne, and Sydney, *via* North Queensland ports, extending to China and Japan	,, ,,
(b) Burns, Philp and Co. ...	Monthly		,, ,,
(c) Nippon Yusen Kaisha ...	Irregularly		Postal Union Rates.
(d) Jolly and Co.	Four times a year	Port Darwin and Boroloola, calling half-yearly at Roper River	Subsidised by agreement for three years. Amount of subsidy, (d) £350; (e) £125 per voyage.
(e) ,, ,, ...	Every eight weeks	Pt. Darwin & Wyndham	
(ii.) TO SOUTH COAST PORTS—			
(a) Gulf Steamship Co.	Weekly	Pt. Adelaide & Kingscote	Subsidised to 31st December, 1910. Amount of subsidy, (a) £495; (b) £270; (c) £270; (d) £135.
(b) ,, ,, ...	Twice a wk.	,, Edithburgh	
(c) ,, ,, ...	,,	,, Stansbury	
(d) ,, ,, ...	Weekly	,, Pt. Vincent	
(e) Adelaide Steamship Co. ...	,,	,, Pt. Lincoln	Subsidised for three years from 1st January, 1908. Amount of subsidy, £1680.
(f) Adelaide Steam Tug Co. ...	As required	Port Pirie & Hummocks Hill	Subsidised without agreement. Amount of subsidy, £36. Subsidies under 6 (i.) (d), (e), and (ii.) (a), (b), (c), (d), (e), (f), paid by South Aust.
7. *Western Australia*—			
(i) INTERSTATE—			
(a) By P. & O. and Orient Lines	Weekly	Fremantle and Adelaide	P. and O. at Postal Union rates. Orient line subsidised. See above 1 (a) and (b).
(b) Adelaide Steamship, the Australian United S. Navigation, Huddart, Parker, Howard Smith, Melb. S.S. Co., and McIlwraith McEacharn lines	Conjointly, weekly	Fremantle, Albany, and Adelaide	Poundage rates.
(c) Messageries Maritimes, Norddeutscher Lloyd, and the German and Ausn. lines ...	Each monthly	Fremantle and Adelaide	Postal Union rates by first two, and poundage rates by last two lines.
(d) White Star line	Monthly	Albany and Adelaide	Poundage rates.
(ii.) TO & FROM PORTS ON N.W. COAST			
(a) Adelaide Steamship Co. ...	,,	Fremantle and Derby	Subsidised by agreement dated 28th February, 1910, for three years. Amount of subsidy, £5000. Subsidy paid by Western Australia.
(b) ,, ,, ...	Once each sixty days	Fremantle & Wyndham	
(c) West Aust. & Ocean S. Co.'s	Fortnightly	Fremantle and Broome	Poundage rates.
(d) Ausn. United S. Navigation and Adelaide S. Co.'s	Irregularly during the cattle se's'n	Fremantle, Derby, and Wyndham	,, ,,
(iii.) TO AND FROM PORTS ON S. COAST			
(a) Adelaide Steamship Co. ...	Weekly	Albany and Esperance	Subsidised by agreement dated 1st Febuary, 1909, for three years. Amount of subsidy, £4000. W.A. Govt. pays £750; Cwth. Govt. £3250.
(b) ,, ,, ...	Fortnightly	Albany & Israelite Bay	
(c) ,, ,, ...	Quarterly	Albany and Eucla	

SUMMARY OF MAIL SERVICES.—(Continued.)

Description of Service.	Frequency of Service.	Ports between which Service is maintained.	Particulars regarding Subsidies.
8. *Tasmania*—			
(a) Union S. Co. and Huddart, Parker Proprietary	3 times a week	Melb'rne & Launceston	Subsidised by agreement dated 1st October, 1909, for three years. Amount of subsidy, £13,000, payable by all States on a *per-capita* basis.
(b) Do. do. do. ...	Twice a wk.	,, ,, Burnie	
(c) Do. do. do. ...	Weekly	Sydney, Hobart, and Wellington	Poundage rates.
(d) Union Steamship Co. ...	Fortnightly	Sydney, Eden, Launceston, and Devonport	,, ,,
(e) New Zealand mail services, see above New Zealand, 3 (a) & (b)	Twice a wk.	Sydney, Melb'ne, Hobart, Bluff, Dunedin, Christchurch, Wellington and Auckland	,, ,,
(f) To and from ports in Western districts	Weekly	Hobart and Strahan	,, ,,
(g) Ellerker and Co.	,,	Melbourne, Burnie, etc.	,, ,,
(h) Huon Channel and Peninsula Steamship Co. Ltd.... ...	Twice a wk.	Hobart and Tasman Peninsula Ports	Subsidised by agreement dated 1st January, 1910, for three years. Amount of subsidy £160 per annum.
(i) Holyman and Sons Ltd. ...	,,	Hobart & Maria Island	Subsidised by agreement dated 1st January, 1910, for three years. Amount of subsidy £25 per annum
(j) ,, ,, ...	Once every three wks.	Launceston and Furneaux group of Islands	Subsidised by agreement dated 1st January, 1911, for two years. Amount of subsidy £375 per annum, £200 paid by Tasmanian Government and £175 by Commonwealth Government.
(k) Stephenson & Gunn ...	,,	Launceston and King Island	Subsidised by agreement dated 1st January, 1910, for three years. Amount of subsidy £200 per annum.
9. *To Eastern Ports*—			
(a) A. Currie and Co.	Once every five weeks	‡Melbourne, Sourabaya, Samarai, Batavia, and Singapore	Subsidised by Victorian Government for trade purposes at £2000 a year for three years from December, 1907. Mails at poundage rates.
(b) Burns, Philp & Co.	Monthly	Sydney, do., do.	Subsidised by N.S.W.Govt. Mails at poundage rates.
(c) China Navigation, Eastern & Ausn., and Burns, Philp Co.'s	About three times a month	Sydney, to Hong Kong, Manilla, etc., *via* North Queensland ports	Poundage rates.
(d) Norddeutscher Lloyd ...	Monthly	*Via* Germ'n New Guinea, Bismarck Archipelago, and Singapore	Postal Union rates.
(e) Nippon Yusen Kaisha ...	,,	Sydney to Manilla, China, and Japan, *via* N. Queensland ports	,, ,,
(f) Various other steamers ...	About monthly	Sydney or Newcastle and ports in Borneo, Java, Sumatra, and Malay Peninsula	Poundage rates.
(g) W.A.S.N. Co. & Ocean S.S. Co.	Fortnightly	W.A. Ports, Java, and Singapore	,, ,,
10. *South Africa*—			
White Star, Lund's, Currie's, and other Companies	Irregularly	Various	,, ,,
11. *North America*—			
(a) Weir line	,,	Sydney, San Francisco, and Vancouver	Poundage rates.
(b) Various steamers	,,	Sydney or Newcastle to San Francisco	Poundage rates.
(c) Various steamers	,,	Sydney to Guaymas (Mexico)	,, ,,
(d) Union S.S. Co.	13 voyages yearly.	Syd., Wellington, Tahiti and San Francisco	,, ,,
12. *South America*—			
Various steamers	About weekly	Sydney or Newcastle to ports in Chili, Brazil, Peru and Uruguay	,, ,,

‡ Calling also irregularly at Sydney or Adelaide.

SUMMARY OF MAIL SERVICES.—(Continued.)

Description of Service.	Frequency of Service.	Ports between which Service is maintained.	Particulars regarding Subsidies.
13. *Pacific Islands*—			
(a) Burns, Philp and Co. ...	Monthly	Sydney to Lord Howe & Norfolk Islands, N. Hebrides	Subsidised by Commonwealth at £12,000 per annum.
(b) " " ...	Every two months	Sydney to Gilbert and Marshall Islands	
(c) " " ...	Fortnightly	British New Guinea	
(d) " " ...	Every six weeks	Solomon Islands	
(e) German S.S. Co.	Every 4 mth	...	Subsidised by German Gov.
14. *Noumea*—			
(a) Messageries Maritimes ...	Fortnightly	Sydney and Noumea and to Vila (New Hebrides) once a month	Postal Union rates.
(b) Other steamers	About fortnightly	Sydney and Noumea	Poundage rates.
15. *Fiji*—			
(a) Union S.S. Co.	Monthly	Sydney and Suva	" "
(b) S.S. South Australian ...	Every six weeks	Sydney & Suva, Fotuna, Rotamah & Wallis Is.	" "
(c) Union S S. Co.	Monthly	Sydney, Auckland, Suva, Tonga, and Samoa	" "
16. *Fiji and Noumea*—			
Burns, Philp and Co.	"	Sydney, Noumea, & Suva	" "
17. *Ocean and Pleasant Islands*—			
Various steamships	"	Sydney, Ocean and Pleasant Islands	" "

11. **Amount of Mail Subsidies Paid by Each State, 1901 to 1909.**—The mail subsidies are paid by the Commonwealth Postal Department, but are debited to the several States. The following table shews the total amount paid by way of mail subsidies in 1901 and for each year from 1903 to 1909 inclusive:—

COMMONWEALTH MAIL SUBSIDIES.—TOTAL AMOUNTS PAID, 1901 to 1909.

Year	1901.	1903.	1904.	1905.	1906.	1907.	1908.	1909.
Amount £	134,332	140,097	163,622	171,294	199,463	198,475	215,609	164,623

The following table shews the amount paid by each State in respect of each mail subsidy during the year ended 30th June, 1909 :—

MAIL SUBSIDIES.—AMOUNT PAID BY EACH STATE IN RESPECT OF EACH SUBSIDY, 1908-9.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Cwlth.
	£	£	£	£	£	£	£
Commonwealth subsidies—							
Orient-Pacific	46,535	37,165	16,148	11,905	7,810	5,434	124,997
Vancouver Service ...	9,944	7,918	3,438	2,501	1,661	1,165	26,627
Victoria-Tasmanian Service	4,840	3,865	1,679	1,238	812	565	12,999
State subsidies—							
Northern Ports of Q'land.	...	...	22,977	...	...	...	22,977
Sth. Coast of Sth. Australia	...	...	...	2,800	...	...	2,800
Northern Territory ...	...	...	...	2,025	...	...	2,025
W. Australia—N. W. Coast	...	...	...	...	4,000	...	4,000
South Coast	...	...	...	...	3,438	...	3,438
Grand total	61,319	48,948	44,242	20,469	17,721	7,164	199,863

Particulars of amounts paid for the carriage of mails at poundage rates and by railways and other conveyances are given in a later part of this section. (See Paragraph 24. *Distribution of Expenditure of Postal Department.*)

12. **Average and Fastest Time of Mails to and from London.**—Great progress has been made in regard to the means of postal communication with the United Kingdom and the continents of Europe and America. In 1857 there was an unsatisfactory ocean mail service, which nominally brought monthly mails, with news nearly sixty days old; at the present time, though but fifty years have elapsed, there are four lines of modern ocean steamships, which bring the mails in about twenty-nine days to Adelaide, in addition to the monthly service *via* Vancouver, by which mails are sent from Sydney to London in thirty-five days. After leaving Fremantle, where the Western Australian mails are landed, the outward mail steamers *via* the Suez Canal all call at Adelaide, where the remaining mails are landed and conveyed to their ultimate destination by rail. The subjoined table shews the average and the fastest times occupied in the conveyance of mails from London to Adelaide and *vice versâ* during the year 1909:—

AVERAGE AND FASTEST TIME OCCUPIED IN CONVEYANCE OF MAILS VIA SUEZ CANAL, BETWEEN LONDON AND ADELAIDE, AND VICE VERSA, DURING 1909.

Service.	London to Adelaide.				Adelaide to London.			
	Average Time.		Fastest Time.		Average Time.		Fastest Time.	
	Days.	Hours.	Days.	Hours.	Days.	Hours.	Days.	Hours.
Peninsular and Oriental S.N. Co., *via* Brindisi and Colombo ...	28	6	28	0	29	20	29	8
Orient Pacific S. N. Co., *via* Naples and Suez	30	11	29	16	31	22	31	3
*Messageries Maritimes, *via* Marseilles	...		...		33	4	32	3
*Norddeutscher Lloyd, *via* Genoa	...		...		32	22	31	3

* No mails were received from London by the Messageries Maritimes or by the Norddeutscher Lloyd services.

The journey by rail from Adelaide, where the mails for the eastern States are landed, to Melbourne takes 17½ hours; from Adelaide to Sydney, 42 hours, including a stop of about seven hours at Melbourne; while the through journey from Adelaide to Brisbane takes just over three days. The journey from Melbourne to Hobart occupies about 29 hours, *via* Launceston, and about 32 hours direct.

The subjoined table shews the average and the fastest times occupied in the conveyance of mails between Sydney and London and *vice-versâ* by the mail routes *via* Vancouver during the year 1909:—

AVERAGE AND FASTEST TIMES OCCUPIED IN CONVEYANCE OF MAILS VIA VANCOUVER BETWEEN LONDON AND SYDNEY, AND VICE VERSA, DURING 1909.

Service.	London to Sydney.		Sydney to London.	
	Average Time.	Fastest Time.	Average Time.	Fastest Time.
	Days.	Days.	Days.	Days.
Canadian-Australian Line, *via* Vancouver ...	$37\frac{1}{13}$	36	$36\frac{4}{13}$	34

12. **Money Orders and Postal Notes.**—The issue of money orders and postal notes in the Commonwealth is regulated by sections 74 to 79 of the Post and Telegraph Act

1901. A money order, which may be issued for payment either within the Commonwealth or abroad, may not be granted for a larger sum than £20, nor a postal note, which is payable only within the Commonwealth, for a larger sum than twenty shillings. Money orders are sent direct from the Commonwealth to the United Kingdom, and to most of the British colonies and possessions; to the German Empire and German colonies; to Italy; and to the United States of America. Money orders, payable in Japan and China, are sent *via* Hong Kong; orders payable in all other countries are sent through the General Post Office in London, where new orders are issued and forwarded to the addresses of the payees, less threepence for every £5, or part thereof. In order that the full amount of the original order may be forwarded to the payee, this extra commission must be paid by the remitter.

(i.) *Value of Orders Issued and Paid and of Notes Sold, 1909.*—The following table shews the total value of money orders issued and paid, and of postal notes sold in each State and in the Commonwealth during the year 1909, together with the total amount of commission on money orders and poundage on postal notes received by the Postal Department:—

VALUE OF MONEY ORDERS ISSUED AND PAID AND OF POSTAL NOTES SOLD, TOGETHER WITH THE TOTAL AMOUNTS OF COMMISSION AND POUNDAGE RECEIVED IN EACH STATE DURING 1909.

State.	Value of Money Orders Issued.	Value of Money Orders Paid.	Net Money Order Commission Received.	Value of Postal Notes Sold.	Poundage Received on Postal Notes.
	£	£	£	£	£
New South Wales ...	2,746,164	2,840,639	21,437	999,313	19,380
Victoria	1,031,215	1,363,064	9,578	826,995	16,216
Queensland	796,933	653,997	7,666	265,069	5,108
South Australia ...	323,932	319,983	3,243	176,837	3,556
Western Australia ...	935,231	649,894	7,605	217,357	3,905
Tasmania	259,792	213,020	2,589	108,517	2,088
Commonwealth ...	6,093,267	6,040,597	52,118	2,594,088	50,253

(ii.) *Rates of Commission on Money Orders.* The rates of commission chargeable for the issue of money orders are as follows:—

RATES OF COMMISSION, MONEY ORDERS, 1910.

If Payable in—	For sums— Not exceeding £2.	Exceeding £2, but not exceeding £5.	Exceeding £5, but not exceeding £7.	Exceeding £7, but not exceeding £10.	Exceeding £10, but not exceeding £12.	Exceeding £12, but not exceeding £15.	Exceeding £15, but not exceeding £17.	Exceeding £17, but not exceeding £20.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
The Commonwealth... ...	0 6	0 6	1 0	1 0	1 6	1 6	2 0	2 0
New Zealand and Fiji ...	0 6	1 0	1 6	2 0	2 6	3 0	3 6	4 0
U. Kingdom & other countries	Sixpence for each £1 or fraction of £1							
Papua—British New Guinea ...	Ninepence ,, £5 ,, ,, £5 up to £20							

Remittances may also be made by telegraph to and from money order offices in the Commonwealth which are also telegraph or telephone offices, and to New Zealand.

The charge for a telegraph money order is the cost of the telegram of advice in addition to the ordinary commission. The remitter must also send a telegram to the payee advising the transmission of the money, which telegram must be produced by the payee when applying for payment.

(iii.) *Rates of Poundage on Postal Notes.* The values of the notes issued have been so arranged that any sum of shillings and sixpences up to £1 can be remitted by not more than two of these notes. Broken amounts not exceeding fivepence (but not fractions of a penny) may be added by affixing postage stamps. The poundage or commission charged on notes of different denominations is as follows :—

POUNDAGE RATES, POSTAL NOTES, 1910.

Denomination of Note ...	6d. to 1s. 6d.	2s. to 4s. 6d.	5s.	7s. 6d.	10s. to 20s.
Poundage charged ...	½d.	1d.	1½d.	2d.	3d.

14. **Number and Value of Money Orders and Postal Notes Issued and Paid, 1901 to 1909.**—The following table shews the total number and face value of money orders and postal notes issued and paid in the Commonwealth during each year from 1901 to 1909 :—

NUMBER AND VALUE OF MONEY ORDERS AND POSTAL NOTES ISSUED AND PAID, 1901 TO 1909.

Year.	Money Orders.				Postal Notes.			
	Issued.		Paid.		Issued.		Paid.	
	Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value.
	No. (,000).	£ (,000).	No. (,000).	£ (,000).	No. (,000).	£ (,000).	No. (,000).	£ (,000).
1901 ...	1,318	4,193	1,339	4,082	3,507	1,290	3,502	1,286
1902 ...	1,283	4,294	1,252	4,164	3,584	1,328	3,610	1,344
1903 ...	1,261	4,346	1,244	4,342	4,022	1,517	3,982	1,518
1904 ...	1,289	4,497	1,266	4,469	4,526	1,718	4,604	1,759
1905 ...	1,312	4,771	1,286	4,760	5,099	1,893	5,079	1,939
1906 ...	1,329	5,059	1,318	5,034	5,478	2,076	5,479	2,078
1907 ...	1,388	5,534	1,374	5,508	6,060	2,271	6,052	2,272
1908 ...	1,437	5,733	1,402	5,725	6,321	2,392	6,321	2,392
1909 ...	1,460	6,093	1,426	6,041	6,866	2,594	6,866	2,594

15. **Classification of Money Orders Issued and Paid, 1909.**—The following table shews the number and value of money orders issued in each State during the year 1909 and classified according to the country where payable :—

MONEY ORDERS ISSUED IN EACH STATE, CLASSIFIED ACCORDING TO COUNTRY WHERE PAYABLE, 1909.

State in which Issued.	Where Payable.				Total.
	In the Commonwealth.	In New Zealand.	In the United K'dom.	In Other Countries.	
	NUMBER.				
New South Wales	552,033	9,082	46,588	10,157	617,860
Victoria ...	203,620	5,805	27,391	9,095	245,911
Queensland ...	182,527	1,738	21,306	5,544	211,115
South Australia ...	74,222	982	11,357	2,965	89,526
Western Australia	189,345	1,139	20,235	2,926	213,645
Tasmania ...	73,790	1,886	5,028	1,101	81,805
Commonwealth	1,275,537	20,632	131,905	31,788	1,459,862

MONEY ORDERS ISSUED IN EACH STATE, Etc.—(Continued).

State in which Issued.	Where Payable.				Total.
	In the Commonwealth.	In New Zealand.	In the United Kingdom.	In Other Countries.	
	VALUE.				
	£	£	£	£	£
New South Wales	2,575,343	27,339	102,858	40,624	2,746,164
Victoria ...	930,294	17,797	55,511	27,613	1,031,215
Queensland ...	709,435	6,027	51,689	29,782	796,933
South Australia ...	289,418	3,461	22,451	8,602	323,932
Western Australia	857,139	5,468	48,563	24,061	935,231
Tasmania ...	241,056	6,742	9,653	2,341	259,792
Commonwealth	5,602,685	66,834	290,725	133,023	6,093,267

The following table shews the number and value of money orders paid in each State during the year 1909, and classified according to the country where issued :—

MONEY ORDERS PAID IN EACH STATE, CLASSIFIED ACCORDING TO THE COUNTRY OF ISSUE, 1909.

State in which paid.	Where Issued.				Total.
	In the Commonwealth.	In New Zealand.	In the United K'dom.	In Other Countries.	
	NUMBER.				
New South Wales	568,420	36,939	16,858	12,197	634,414
Victoria ...	276,441	27,446	11,297	9,056	324,240
Queensland ...	159,371	2,699	5,041	2,300	169,411
South Australia ...	75,484	1,942	2,882	1,425	81,733
Western Australia	142,665	2,020	4,515	1,050	150,250
Tasmania ...	56,013	6,320	1,909	1,946	66,188
Commonwealth	1,278,394	77,366	42,502	27,974	1,426,236
	VALUE.				
	£	£	£	£	£
New South Wales	2,643,469	92,869	51,641	52,660	2,840,639
Victoria... ...	1,222,142	69,396	34,500	37,026	1,363,064
Queensland ...	617,225	9,389	17,301	10,082	653,997
South Australia ...	300,565	5,381	8,375	5,662	319,983
Western Australia	624,910	5,127	14,999	4,858	649,894
Tasmania ...	188,991	14,411	4,577	5,041	213,020
Commonwealth	5,597,302	196,573	131,393	115,329	6,040,597

In the above tables money orders payable or issued in foreign countries, which have been sent from or to the Commonwealth through the General Post Office at London, are included in those payable or issued in the United Kingdom.

16. **Money Orders Issued and Paid at Capital Cities.**—Particulars as to the number and value of money orders issued and paid at the capital cities in each of the several States of the Commonwealth during the year 1909 are given in the following table:—

NUMBER AND VALUE OF MONEY ORDERS ISSUED AND PAID AT THE CAPITAL CITIES OF THE COMMONWEALTH DURING 1909.

City.	Money Orders Issued.		Money Orders Paid.	
	Number.	Value.	Number.	Value.
		£		£
Sydney	119,129	365,623	226,184	1,317,829
Melbourne	31,519	286,450	119,404	416,227
Brisbane	21,036	83,798	62,989	223,825
Adelaide	18,311	72,743	41,805	164,029
Perth	21,869	102,829	74,542	267,165
Hobart	12,942	47,853	24,824	78,861

17. **Classification of Postal Notes Paid, 1909.**—The subjoined table shews the number and value of postal notes paid during the year 1909 in each State and in the Commonwealth, classified according to the State in which they were issued.

Particulars regarding the total number and value of postal notes issued and paid during previous years since the inauguration of the Commonwealth have already been given in paragraph 14 hereof.

NUMBER AND VALUE OF POSTAL NOTES PAID, CLASSIFIED ACCORDING TO STATE OF ISSUE, 1909.

State in which Paid.	Postal Notes Issued in—						
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Cwlth.
	NUMBER.						
New South Wales	2,271,949	100,834	118,080	39,897	23,684	21,864	2,576,308
Victoria ...	154,918	1,887,728	32,625	52,071	44,967	54,440	2,226,749
Queensland ...	38,969	8,544	510,377	1,692	1,601	930	562,113
South Australia ...	32,467	22,120	2,112	368,371	15,322	1,384	441,726
Western Australia	5,810	9,943	902	5,952	376,555	663	399,825
Tasmania ...	166,980	217,070	24,520	33,553	5,341	211,605	659,069
Commonwealth	2,671,093	2,246,239	688,616	501,536	467,470	290,836	6,865,790
	VALUE.						
	£	£	£	£	£	£	£
New South Wales	851,166	42,794	45,919	14,645	11,167	7,737	973,428
Victoria ...	65,789	702,641	12,759	20,511	25,316	23,140	850,156
Queensland ...	16,527	3,973	195,737	709	846	413	218,205
South Australia ...	15,972	9,727	1,024	127,600	9,040	634	163,997
Western Australia	2,585	5,135	476	2,984	168,474	240	179,894
Tasmania ...	47,274	62,725	9,154	10,388	2,514	76,353	208,408
Commonwealth	999,313	826,995	265,069	176,837	217,357	108,517	2,594,088

The following statement shews the number of postal notes of each denomination paid in the Commonwealth during the year 1909 :—

NUMBER OF POSTAL NOTES PAID, CLASSIFIED ACCORDING TO DENOMINATION, 1909.

Denomination.	Number Paid.	Denomination.	Number Paid.	Denomination.	Number Paid.
s. d.		s. d.		s. d.	
0 6	67,693	3 6	352,538	10 6	171,685
1 0	314,256	4 0	566,469	15 0	419,756
1 6	213,981	4 6	410,743	20 0	931,441
2 0	378,323	5 0	822,327		
2 6	471,242	7 6	352,937		
3 0	548,390	10 0	844,009	Total ...	6,865,790

18. **Postal Notes Issued and Paid at Capital Cities.**—In the subjoined table, figures are given shewing the number and value of postal notes issued and paid at the principal cities in each of the States of the Commonwealth during the year 1909 :—

POSTAL NOTES ISSUED AND PAID AT CAPITAL CITIES IN THE COMMONWEALTH DURING 1909.

City.	Postal Notes Issued.		Postal Notes Paid.	
	Number.	Value.	Number.	Value.
		£		£
Sydney	134,177	52,014	933,951	334,375
Melbourne	101,007	40,872	790,664	282,892
Brisbane	47,862	19,666	191,770	73,720
Adelaide	59,280	22,837	262,567	95,029
Perth	39,565	20,015	230,999	97,306
Hobart	24,493	9,771	421,826	130,681

19. **The Value Payable Post.**—This is a system under which the Postal Department undertakes to deliver registered articles sent by parcel post within the Commonwealth, and to recover from the addressee on delivery a specified sum of money fixed by the sender, and to remit the sum to the sender by money order, for which the usual commission is charged. The object of the system is to meet the requirements of persons who wish to pay at the time of receipt for articles sent to them, and also to meet the requirements of traders and others who do not wish their goods to be delivered except on payment. In addition to the ordinary postage, commission on the value of the articles transmitted at the rate of twopence on sums not exceeding ten shillings, and one penny for each additional five shillings or part thereof, must be prepaid by postage stamps affixed to the articles distinct from the postage and marked "commission." The registration fee (threepence) and the proper postage must also be prepaid. If the addressee refuse delivery, the parcel is returned to the sender free of charge. Any article that can be sent by parcel post may be transmitted as a value-payable parcel. Letters may also be sent as value-payable parcels, if prepaid at the letter rate of postage and handed

to the parcels clerk in the same manner as in the case of parcels. The subjoined statement gives particulars of the number and value of parcels sent through the Value Payable Post in each State during the years 1907, 1908, and 1909. From these figures it will be seen that the business in Queensland is greatly in excess of the combined transactions of all the other States, owing to the fact that the system has been established in that State for some years, but was only extended to the whole Commonwealth with the advent of Federal control of the post office.

VALUE PAYABLE PARCELS POST.—NUMBER POSTED, VALUE COLLECTED, AND REVENUE, 1907 to 1909.

State.	Number of Parcels Posted.			Value collected.			Revenue, including Postage, Commission on Value, Registration and Money Order Commission.		
	1907.	1908.	1909.	1907.	1908.	1909.	1907.	1908.	1909.
	No.	No.	No.	£	£	£	£	£	£
New South Wales	4,814	6,400	7,585	7,763	11,755	10,926	702	985	937
Victoria	617	270	1,051	1,075	347	1,697	96	30*	164
Queensland ...	27,729	26,865	31,765	36,876	36,924	39,351	3,954	3,713	4,112
South Australia ...	39	125	149	77	236	234	6	18	22
Western Australia	9,236	13,093	19,250	15,783	21,331	30,712	1,333	1,869	2,603
Tasmania ...	72	62	42	83	132	93	7	9	6
Commonwealth	42,507	46,815	59,842	61,657	70,725	83,013	6,098	6,624	7,844

* Exclusive of postage.

20. **Transactions of the Dead Letter Office, 1909.**—Under sections 45 to 53 of the Post and Telegraph Act 1901 the Postmaster-General may cause all unclaimed and undelivered postal articles originally posted within the Commonwealth which have been returned from the place to which they were forwarded to be treated as unclaimed articles and opened. Every unclaimed letter and postal article must be kept for the prescribed period at the office to which it has been transmitted for delivery, and must then be sent to the General Post Office. Letters and packets originally posted elsewhere than in the Commonwealth are returned to the proper authorities in the country in which they were so posted, or, if originally posted in another State, are returned to the General Post Office of that State; but unclaimed or undelivered newspapers may be forthwith sold, destroyed, or used for any public purpose. Opened postal articles not containing anything of value are returned to the writer or sender if his name and address can be ascertained, but may otherwise be destroyed forthwith. As regards opened letters and packets containing valuable or saleable enclosures, a list and memorandum of the contents are kept, and a notice is sent to the person to whom the letter or packet is addressed if he be known, or otherwise to the writer or sender thereof if he be known. Upon application within three months of the date of such notice the letter or packet may be claimed by the addressee, or, failing him, by the writer or sender. If unclaimed within three months, the letter and contents may be destroyed or sold, and the proceeds paid into the consolidated revenue fund. The following table shews the total number of letters, postcards, and packets dealt with by the Dead Letter Offices in the Commonwealth during the year 1909, together with the number of inland, interstate, and international letters either returned to writers, delivered, etc., destroyed, or returned as unclaimed :—

TRANSACTIONS OF DEAD LETTER OFFICES IN THE COMMONWEALTH, 1909.

Particulars.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	Cwlth.
LETTERS (,000 omitted).							
Returned to writers, delivered, etc. ...	325	235	118	22	55	43	798
Destroyed in accordance with Act ...	65	58	13	9	6	4	155
Returned to other States or Countries as unclaimed	46	36	25	19	16	15	157
Total	436	329	156	50	77	62	1,110
POSTCARDS (,000 omitted).							
Returned to writers, delivered, etc. ...	7	8	19	7	14	3	58
Destroyed in accordance with Act ...	80	12	5	9	4	3	113
Returned to other States or Countries as unclaimed	6	8	3	3	3	2	25
Total	93	28	27	19	21	8	196
PACKETS (,000 omitted).							
Returned to writers, delivered, etc. ...	739	34	83	33	42	5	936
Destroyed in accordance with Act ...	39	76	9	6	5	...	135
Returned to other States or Countries as unclaimed	10	41	35	17	22	16	141
Total	788	151	127	56	69	21	1,212
Grand Total (letters, postcards, & packets)	1,317	508	310	125	167	91	2,518

21. **Post Offices and Receiving Offices and Employees, 1901 to 1909.**—The following tables shew, as far as returns are available, the numbers of post and receiving offices and the corresponding numbers of employees in each State and in the Commonwealth at the end of the year 1901, and from 1905 to 1909 inclusive :—

NUMBER OF POST OFFICES AND RECEIVING OFFICES, 1901 to 1909.

State.	1901.		1905.		1906.		1907.		1908.		1909.	
	Post Offices.	Receiving Offices.	Post Offices.	Receiving Offices.	Post Offices.	Receiving Offices.	Post Offices.	Receiving Offices.	Post Offices.	Receiving Offices	Post Offices	Receiving Offices.
New South Wales ...	1,684	524	1,744	522	1,769	519	1,809	510	1,842	526	1,884	513
Victoria	1,637	18	1,655	18	1,659	657	1,656	670	1,633	713	1,642	728
Queensland*	411	823	447	913	468	886	480	909	499	896	522	856
South Australia ...	699	...	710	...	706	7	704	12	686	29	631	92
Western Australia ...	187	28	261	34	281	57	298	67	320	72	331	82
Tasmania†	376	...	370	9	373	19	375	31	378	36	377	40
Commonwealth ...	4,994	1,393	5,187	1,496	5,256	2,145	5,322	2,199	5,358	2,272	5,387	2,311

* For the year 1901 the number of receiving offices is included in post offices in the official returns, and separate figures here given are estimated. † The return for 1901 includes both post offices and receiving offices.

NUMBER OF EMPLOYEES AND NUMBER OF MAIL CONTRACTORS, 1901 to 1909.

State.	1901.		1905.		1906.		1907.		1908.		1909.	
	Employees.	Mail Contractors.	Employees.	Mail Contractors.	Employees.	Mail Contractors.	Employees.	Mail Contractors.	Employees.	Mail Contractors.	Employees.	Mail Contractors.
New South Wales ...	5,636	984	5,890	1,029	5,943	1,037	6,964	1,072	7,343	1,305	7,469	1,553
Victoria	3,962	890	4,086	912	4,896	919	5,744	758	5,989	776	6,285	804
Queensland*	2,616	—	2,640	—	2,610	630	3,021	640	3,073	550	3,146	589
South Australia† ...	1,945	—	1,727	259	1,734	255	1,767	261	1,871	237	1,896	259
Western Australia ...	1,303	140	1,273	154	1,941	152	1,579	208	1,670	206	1,736	234
Tasmania‡	865	—	—	—	811	164	814	172	843	177	874	186
Commonwealth ...	16,327	2,014	15,616	2,354	17,935	3,157	19,889	3,111	20,789	3,251	21,406	3,625

* Country postmasters and receiving officers included in employees. † Non-official postmasters are included in employees. ‡ The return for 1901 includes all persons in the pay of the Postal Department.

At the end of the year 1909, out of the total number of persons, 25,031, employed in the Postmaster-General's Department, 14,491 were employed wholly, and 10,540 were employed partially in the service.

22. **Postal Routes, 1909.** The following table shews the length of postal routes and the number of miles travelled by mail conveyances during the year 1909:—

POSTAL ROUTES, 1909.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
MILES OF ROUTE.							
Railway ...	3,469	3,300	3,937	2,174	2,157	631	15,668
Water ...	4,438	52	2,267	9,179	2,951	881	19,768
Other ...	35,825	10,955	28,998	8,522	9,335	1,897	95,532
Total... ...	43,732	14,307	35,202	19,875	14,443	3,409	130,968
MILES TRAVELLED BY MAIL CONVEYANCES (,000 omitted.)							
Railway ...	1,238	4,290	3,249	1,734	1,425	812	12,748
Water ...	688	21	278	297	155	207	1,646
Other ...	8,801	3,722	4,031	1,591	873	866	19,884
Total	10,727	8,033	7,558	3,622	2,453	1,885	34,278

23. **Gross Revenue of Postal Department, 1901 to 1909.**—The following table shews the gross revenue of the Postal Department for the years ended 30th June, 1901 to 1909 inclusive, under three heads, viz., the Postal, the Telegraph, and the Telephone branches. In the Postal branch is included the revenue derived from money-order commissions, poundage on postal notes, private boxes and bags, and miscellaneous sources.

GROSS REVENUE OF POSTAL DEPARTMENT, 1901 to 1909.

Year ended 30th June.	Postal Branch.	Telegraph Branch.	Telephone Branch.	Total.
	£	£	£	£
1901*	516,181	224,484†	‡	740,665
1902	1,743,662	629,199†	‡	2,372,861
1903	2,046,999	358,805†	‡	2,405,804
1904	1,726,467	498,957	286,328	2,511,752
1905	1,791,023	530,220	312,321	2,633,564
1906	1,907,277	565,422	352,214	2,824,913
1907	2,153,141	588,167	388,226	3,129,534
1908	2,240,367	649,481	410,741	3,300,589
1909	2,325,327	642,548	441,551	3,409,426

* Period from 1st March to 30th June, 1901. † Including telephone revenue. ‡ Included in telegraph revenue.

The following tables give an analysis of the gross earnings of the Postal Department in each State and in the Commonwealth during the year ended 30th June, 1909:—

ANALYSIS OF GROSS REVENUE OF POSTAL DEPARTMENT, 1908-9.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Cwlth.
	£	£	£	£	£	£	£
Postage	857,243	536,189	288,656	189,608	142,645	96,992	2,111,333
Telegraphs	206,758	138,939	106,686	97,951	73,732	18,482	642,548
Telephones	175,961	131,766	50,655	34,329	34,442	14,398	441,551
Money order commission ...	21,080	9,767	7,210	3,131	7,570	2,589	51,347
Poundage on postal notes ...	19,342	15,155	5,108	3,454	3,540	2,088	48,687
Private boxes and bags ...	7,200	3,175	3,312	1,378	1,648	835	17,548
Miscellaneous	32,171	21,641	14,708	15,431	9,375	3,086	96,412
Total	1,319,755	856,632	476,335	345,282	272,952	138,470	3,409,426

24. **Expenditure in respect of the Postal Departments, 1901 to 1909.**—The subjoined table shews the total expenditure in respect of the Postal Department in the Commonwealth for each of the years ended 30th June, 1902 to 1909 inclusive. The figures given include certain items of expenditure, such as rent, repairs and maintenance of buildings, fittings and furniture, sanitation, water supply, and new buildings and additions, which are under the control of the Department of Home Affairs.

TOTAL EXPENDITURE IN RESPECT OF POSTAL DEPARTMENT, 1901-2 to 1908-9.

Year.	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.	1907-8.	1908-9.
Expenditure ... £	2,478,796	2,568,846	2,697,454	2,699,666	2,784,665	2,966,099	3,345,840	3,611,677

The following table shews the distribution of expenditure on various items in each State during the year ended 30th June, 1909:—

DISTRIBUTION OF EXPENDITURE OF POSTAL DEPARTMENTS, 1908-9.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Cwlth.
	£	£	£	£	£	£	£
Proportion of Central office expenses	4,013	3,205	1,393	1,027	674	469	10,781
Salaries	551,289	395,978	184,189	146,487	166,223	52,789	1,496,955
Contingencies	214,226	153,060	112,556	51,323	67,122	29,026	627,313
Conveyance of mails—							
Steamship—Subsidised ...	61,319	48,948	21,265	15,644	10,283	7,164	164,623
Poundage rates ...	7,600	3,840	4,263	761	1,962	1,087	19,513
Railway	98,498	63,646	61,289	29,311	26,472	13,771	292,987
Other	117,833	50,535	80,291	29,890	32,279	10,881	321,709
Cable subsidies, etc.	36,202	29,149	18,396	6,976	4,576	8,090	103,389
Telegraph works	17,246	3,038	6,089	1,491	1,782	129	29,775
Telephone works	89,886	96,535	41,674	31,777	21,702	15,093	296,667
Rent	8,199	2,723		528	560	42	
Repairs and maintenance of buildings	8,138	4,873	8,775	2,181	3,325	1,395	51,847
Fittings and furniture	892	1,759		617			
Sanitation and water supply ...	3,275	2,931		421	1,056	157	
Additions, new works, etc.	19,357	101,347	21,239	7,494	6,358	2,614	158,409
Pensions, etc.	11,235	10,836	1,760	...	2,097	...	25,928
Supervision of works	779	224	655	270	337	74	2,339
Proportion of Audit Office expenses	661	507	377	330	314	216	2,405
Miscellaneous	1,878	1,332	1,972	322	1,070	463	7,037
Total	1,252,526	974,466	566,183	326,850	348,192	143,460	3,611,677

25. **Royal Commission on Postal Services.**—On 22nd June, 1908, a Royal Commission was appointed to report upon the Postal, Telegraphic, and Telephonic Services of the Commonwealth, and more particularly in relation to the following matters :—(*a*) Management ; (*b*) Finance ; (*c*) Organisation, including discipline ; (*d*) Extensions in country districts, and particularly in remote or sparsely-populated parts of the Commonwealth ; and (*e*) Complaints in relation to the services. The inquiry was commenced in July, 1908, and occupied 228 sittings. The Commissioners visited every State and took evidence at each State capital and also at Fremantle, Kalgoorlie, and Launceston. In addition, personal visits of inspection were made to all the General Post Office buildings and many branch telephone exchanges and suburban post-offices of Sydney and Melbourne. The number of witnesses examined by the Commissioners was 190, including representatives of public and commercial institutions, experts, and prominent members of the Commonwealth Public Service. Recommendations numbering 175, were made by the Commission in a report laid before Parliament on 30th September, 1910. These refer to a great variety of subjects and matters, but owing to exigencies of space particulars in regard thereto cannot be given in this publication.

§ 2. Telegraphs.

1. **First Lines Constructed.**—The electric telegraph was first introduced into Australia for use by the public in the year 1854, when a line from Melbourne to Williamstown was opened. The first line in South Australia, from Adelaide to Port Adelaide, was opened in 1856, while the first line in New South Wales was brought into operation in 1858, when the line from Sydney to Liverpool, twenty-two miles in length, was opened. In Tasmania the first telegraphic line was completed in 1857, while in the following year communication was established between Sydney, Melbourne, and Adelaide. The first line to be constructed in Queensland was that between Brisbane and Rockhampton, a distance of 396 miles, which was opened in 1864. In Western Australia the first telegraph constructed was from Perth to Fremantle, a distance of twelve miles, which was brought into use in 1869, and in the same year the cable joining Tasmania with the continent of Australia was completed.

2. **Development of Services.**—During the period from 1871 to 1881 great progress was made throughout Australia in the way of telegraphic construction, over 14,000 miles of line, exclusive of railway telegraph lines, being opened for use during the period mentioned, making the total length of the line open at the end of the year 1881, 25,470 miles. In the case of South Australia this increase was to a large extent due to the construction of the transcontinental lines (*a*) from Adelaide to Port Darwin (a distance of 2230 miles), which was completed on the 22nd August, 1872, at a cost of nearly half a million sterling, and (*b*) from Port Augusta to Port Lincoln, and thence along the coast of the Great Australian Bight as far as Eucla, on the Western Australian border. In Queensland there was a large increase resulting from the construction of the line to Normanton, on the Gulf of Carpentaria, while in Western Australia the line from Perth to Albany was extended as far as Eucla on the 9th December, 1877, thus establishing telegraphic communication between the six capital towns, Brisbane, Sydney, Melbourne, Adelaide, Perth, and Hobart. At the present time the systems of telegraph lines throughout Australia are well developed. The longest line extends from Thursday Island, in Torres Straits, by submarine cable to Paterson, on the mainland of Cape York Peninsula; from Paterson the line runs in a southerly direction as far as Brisbane, where it joins the main interstate line to Sydney, Melbourne, and Adelaide; from Adelaide it runs to Port Augusta, then on to Port Lincoln, on Eyre's Peninsula, and thence to Eucla, on the Western Australian boundary; from Eucla the line extends along the coast of the Great Australian Bight to Albany, and thence it runs adjacent to the west coast of Western Australia as far as Onslow, *via* Perth, Geraldton, and Carnarvon. From Onslow connection extends to Broome, in Roebuck Bay, from which place communication is made to Singapore by the Eastern Extension Company's cable. From Roebuck Bay the line crosses the Kimberley district in an easterly direction, and then runs north as far as the terminus at Wyndham. In Queensland a line runs to Burketown, near the coast of the Gulf of Carpentaria, *via* Normanton; another line extends to Cloncurry and Urandangi, in the extreme west of the State. Branch lines extend to all important coastal and inland towns, while considerable networks of lines converge from the country districts towards the centres of population. From Adelaide the transcontinental line, referred to above, runs in a northerly direction to Port Darwin, from which place communication is provided with Europe by submarine cable by way of Batavia, Singapore, and Madras. In Western Australia a line runs from Eucla to the Coolgardie goldfields *via* Balladonia and Dundas, and from Coolgardie communication is provided with Perth and with Sir Samuel, in the East Murchison district.

3. **Number of Telegraph Offices and Length of Lines and Wire Open, 1901 to 1909.**—The following table shews the number of telegraph offices and the length of telegraphic lines and of telegraph wire, exclusive of railway telegraphs, available for use in the Commonwealth at the end of the year 1901, and from 1905 to 1909 inclusive:—

NUMBER OF TELEGRAPH OFFICES, LENGTH OF LINE AND WIRE, AVAILABLE FOR USE, 1901 to 1909.

Particulars.	1901.	1905.	1906.	1907.	1908.	1909.
No. of Offices ... No.	2,567	2,785	2,955	3,211	3,445	3,597
Length of Line ... miles*	41,951	42,630	42,575	43,384	44,132	42,298
,, Wire ... ,, †	101,708	129,739	131,939	85,173	94,025	89,468

* Including telephone and railway telegraph lines in New South Wales, up to and including 1908, and including railway telegraph lines in South Australia up to and including 1905. † Including telephone and railway telegraph wires in New South Wales up to and including 1906, and including railway telegraph wires in South Australia up to and including 1905.

The following table gives corresponding particulars for each State for the year 1909. The particulars are exclusive of railway telegraphs:—

NUMBER OF TELEGRAPH OFFICES, LENGTH OF LINE AND WIRE IN EACH STATE, 1909.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Cwlth.
No. of Offices No.	1,329	794	582	346	292	254	3,597
Length of Line miles	14,580	4,093	10,439	5,332	6,222	1,632	42,298
,, Wire ,,	28,280	11,530	22,197	13,309	10,944	3,208	89,468

4. **Revenue and Expenditure, 1901 to 1909.**—Particulars as to the revenue from the telegraph systems for the years 1901 to 1909 are given on page 782, while particulars as to the expenditure on telegraph works for the year 1908-9 are given on page 783.

5. **Number of Telegrams Despatched, 1901 to 1909.**—The following table shews the total number of telegrams despatched in the Commonwealth in 1901 and in each of the years 1903 to 1909 inclusive:—

NUMBER OF TELEGRAMS DESPATCHED, (,000 OMITTED) 1901 to 1909.

Year	1901.	1903.	1904.	1905.	1906.	1907.	1908.	1909.
Number* ...	8,003	8,743	8,688	9,098	10,099	10,867	11,280	11,299

* Including inter-state cablegrams.

The following table shews the number of telegrams despatched in each State in 1909 for delivery in that State, and the number despatched in each State for delivery in other States, and also the total number of telegrams—exclusive of cablegrams—despatched in each State :—

NUMBER OF TELEGRAMS DESPATCHED IN EACH STATE, 1909 (,000 OMITTED).

State, etc.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
Inland (counted once)	3,067	1,796	1,530	848	1,251	225	8,717
Interstate*	743	685	385	331	302	136	2,582
Total	3,810	2,481	1,915	1,179	1,553	361	11,299

* Including interstate cablegrams.

6. **Telegrams Despatched from, and Received at, Capital Cities.**—The following table shews the number of telegrams despatched from, and received at, the principal offices in each State of the Commonwealth during 1909 :—

TELEGRAMS DESPATCHED FROM, AND RECEIVED AT, CAPITAL CITIES IN THE COMMONWEALTH, 1909.

City.	Despatched.	Received.	City.	Despatched.	Received.
	Number.	Number.		Number.	Number.
Sydney	574,995	*	Adelaide	261,792	341,405
Melbourne	452,961	869,868	Perth	307,432	398,693
Brisbane	428,256	481,722	Hobart	98,880	150,190

* Not available.

7. **Rates for Transmission of Telegrams.**—The present rates for the transmission of telegrams within the Commonwealth were fixed by section 7 of the Post and Telegraph Rates Act 1902, and came into force on the 1st November, 1902. Under this Act charges are made for telegrams according to whether they are "ordinary" or "press" telegrams. "Press" telegrams are defined to mean those the text of which consists of political, commercial, etc., information, and of news intended for publication in a newspaper. The telegram must be sent by an authorised correspondent, and must be addressed to a registered newspaper or recognised news agency. The subjoined tables shew the scales of charges:—

SCALE OF CHARGES FOR ORDINARY TELEGRAMS, 1910.

Particulars.	Town and Suburban, within Prescribed Limits, or within 15 Miles from the Sending Station.	Other Places within the State, except Town and Suburban.	Interstate.
	s. d.	s. d.	s. d.
Including address and signature—			
Not exceeding 16 words	0 6	0 9	1 0
Each additional word	0 1	0 1	0 1

Double the foregoing rates are imposed for the transmission of telegrams on Sunday, Christmas Day, and Good Friday, and between the hours of 8 p.m. and 9 a.m., and for telegrams sent on "urgent" forms.

SCALE OF CHARGES FOR PRESS TELEGRAMS, 1910.

Particulars.	Within any State.	Interstate.	Relating to Parliamentary, Executive, Departmental, and other Commonwealth Proceedings as may be prescribed.
	s d.	s. d.	s. d.
Not exceeding 25 words	0 6	1 0	...
From 25 to 50 words	0 9	1 6	...
From 50 to 100 words	1 6	3 0	...
Every additional 50 words	0 6	1 0	...
Within the Commonwealth.			
Not exceeding 25 words			1 0
From 25 to 100 words			1 6
Every additional 50 words			0 6

8. **Wireless Telegraphy.**—Under the Wireless Telegraphy Act 1905 the Postmaster-General is given the exclusive privilege of establishing and using stations and appliances for receiving and transmitting messages by wireless telegraphy within Australia. The Postmaster-General is empowered to grant licenses to establish and use stations and appliances for wireless telegraphy, on the fulfilment of the prescribed conditions and payment of the prescribed fees. The Act does not apply to ships belonging to the King's Navy. Tenders for the erection of high-power stations at Sydney and Fremantle were invited and received by the Postmaster-General early in 1910, and the tender of the Australasian Wireless Ltd. was accepted at a contract price of £4150 for each station. The site originally chosen for the wireless station in the former State was altered to Pennant Hills, about thirteen miles from Sydney, on the Newcastle railway line, while Fremantle is the selected position in Western Australia. In consequence of the New South Wales site having been changed, the contract price for that station was increased to £6150, on

account of the higher-powered plant that will be required. The contractors have agreed to complete the installation of these stations within twelve months from the dates on which the sites are handed over to them. The system to be used is the "Telefunken." The company guarantees that the plant shall be effective over a range of 1250 miles, subject to a penalty of £5000. Tenders are being called for the erection of stations at Thursday Island and Papua. Certain vessels trading on the coast of Australia are being fitted with wireless telegraphy apparatus of the "singing spark" type, which is largely used in Japan, Africa, and the United States.

In December, 1909, a conference of representatives of the Commonwealth, New Zealand, the High Commissioner for the Western Pacific, Fiji, the Admiralty, and the Pacific Cable Board was convened at Melbourne to report upon the establishment of wireless telegraphy in the Pacific. The chief recommendations of this Conference were :—(*a*) That high-power stations be established at Sydney, Doubtless Bay (New Zealand), Suva (Fiji), and Ocean Island, and (*b*) that medium-power stations be established at Tulagi (Solomon Islands), and Vila (New Hebrides). The total cost of construction of the scheme covered by these recommendations was £42,000, while the total annual cost was estimated at £13,820 for a continuous service, and £9970 for a restricted service. It was proposed to apportion the cost between Great Britain, New Zealand, Fiji, and Australia. These recommendations have been adopted by the Commonwealth Government.

§ 3. Submarine Cables.

1. **First Cable Communication with the Old World.**—As far back as 1857 the question of connecting Australia with the old world by means of submarine cables was brought forward in South Australia. No steps, however, were taken in the direction of constructing the cable until the year 1869, when various schemes were proposed. About this time the British Australian Telegraph Company was formed for the purpose of laying a cable to Australia without subsidy or guarantee. Communication had already been provided between London and Singapore *via* Bombay and Madras, and also through Java from Batavia to Banjoewangie. The proposal of the above company was to lay cables from Singapore to Batavia and from Banjoewangie to Port Darwin, from which place connection would be made overland with the Queensland telegraph system at Normanton. It was, however, subsequently decided that the company's line should end at Port Darwin, the South Australian Government undertaking to construct an overland line from Port Augusta to Port Darwin, a distance of 1971 miles. In November, 1871, the submarine cable was completed, and communication was established between Port Darwin and London. On the 22nd August, 1872, the construction of the line from Port Darwin to Adelaide was accomplished at an expenditure of nearly £500,000. The cable from Port Darwin is now under the control of the Eastern Extension Telegraph Company.

2. **The Tasmania-Victoria Cables.**—In the meantime the cable joining Tasmania to the continent of Australia had been laid, and was open for use in 1869, the total length being 170 miles. The line was owned by the Eastern Extension Telegraph Company, and was subsidised by the Tasmanian Government until the year 1909. On the 28th February, 1908, the Postmaster-General entered into an agreement with Messrs. Siemens Brothers and Company Ltd., of London, for the manufacture and laying of two submarine cables between Tasmania and Victoria. The laying of these cables was completed in February, 1909. Their aggregate length is approximately 350 nautical miles of main cable, and 20 nautical miles each of intermediate and shore end cable, making a total of 390 nautical miles. The contract price, excluding the supply of spare cable, was £49,455.

3. **The Eastern Extension Company's Cables.**—In addition to the Victoria-Tasmania cable and the original cable from Port Darwin referred to above, the Eastern Extension

Company has constructed and has control over several other cables connecting with various places in the Commonwealth. (*a*) In 1879 the original cable *via* Banjoewangie was duplicated, the States of New South Wales, Victoria, South Australia, Western Australia and Tasmania having agreed to pay the above company a subsidy of £32,400 per annum for a period of twenty years, the amount to be divided between the States on a population basis. (*b*) In 1881 a cable was constructed connecting Broome, in Roebuck Bay, W.A., with Banjoewangie ; from Broome there is direct telegraphic communication with Perth, from which place communication is made with the Eastern States by the interstate line *via* Albany, Eucla, and Port Augusta. (*c*) In July, 1899, the company offered to lay a cable direct to Great Britain *via* the Cape of Good Hope, and also offered reductions in the rates charged, if the States would agree to certain conditions giving the company the right of direct dealing with the public. The States of South Australia, Western Australia and Tasmania accepted the terms offered, and New South Wales entered into the agreement in January, 1901. The cable was opened *via* Fremantle and Durban in October, 1901. (*d*) Another submarine cable from Fremantle to Adelaide forms an alternative line of communication between the eastern States and Western Australia. (*e*) There is an alternative route, partly belonging to the Eastern Extension Company and connecting the Port Darwin-Singapore cable with London, *via* Hong Kong, Shanghai, Possiet Bay (Pacific Russia), Libau (Russian Baltic), and Newbiggin (England).

4. **The Pacific Cable.**—In July, 1898, a conference of representatives of Great Britain, Canada, New South Wales, Victoria, Queensland, South Australia and New Zealand was held for the purpose of considering a project for a cable to be laid across the Pacific Ocean, touching only British territory on its way from Australia to Canada, thus providing an "All Red" route, as it is termed, for a cable system between England and Australia. In the following year it was agreed at a meeting held by representatives of the countries interested that the cable should be laid and that Great Britain and Canada should each pay five-eighteenths of the cost, and the States of New South Wales, Victoria, Queensland, and the Dominion of New Zealand should each pay one-ninth. The construction and management of the cable were placed under the control of a Board composed of seven members—two each from Great Britain, Canada, and Australia, and one from New Zealand—called the Pacific Cable Board. The Australian shore-end of the cable was landed at Southport, Queensland, in March, 1902, and the cable was completed and opened for use on the 3rd November, 1902. There are cable-stations at Norfolk Island, Fiji, and Fanning Island, and a branch cable runs from Norfolk Island to New Zealand. The following table shews particulars of the revenue, expenditure, total loss, and the proportion of the loss payable by the Commonwealth for each financial year since the opening of the cable :—

REVENUE, EXPENDITURE, AND LOSS ON WORKING OF PACIFIC CABLE, 1903 to 1910.

Year ended the 31st March.	Revenue.	Expenditure (including Annuities and Renewal Fund).	Loss.	Commonwealth Proportion of Loss.
	£	£	£	£
1903 ...	...	...	90,518	30,172
1904 ...	80,118	167,869	87,751	29,250
1905 ...	87,446	163,296	75,850	25,283
1906 ...	91,952	164,508	72,556	24,185
1907 ...	113,516	167,439	53,923	18,307
1908 ...	110,160	172,523	62,363	20,787
1909 ...	113,093	173,981	60,888	20,296
1910 ...	111,724	171,312	59,588	19,863

The total cost of construction to the 31st March, 1910, was £1,999,127, originally paid by Great Britain. The proportions of this cost payable by the other countries is to be paid off by 50 annual instalments. The total amount of the annuity paid to Great Britain during the year 1909-10 was £77,545, while the amount paid to the renewal fund was £30,000.

5. **New Zealand Cables.**—A submarine cable joining New Zealand to the Australian Continent was laid in 1876. The line is 1191 miles in length. The Australian shore-end of the cable is at Botany Bay, while the New Zealand terminus is at Wakapuaka, near Nelson, in the Middle Island, from which place another cable, 109 miles in length, is laid to Wanganui, in the North Island. For a period of ten years after its opening the cable was subsidised by the New South Wales and New Zealand Governments, the total contributions amounting to £10,000 a year. The branch from Norfolk Island to New Zealand of the Pacific cable was opened on the 23rd April, 1902. The length of this cable is 597 miles, the New Zealand terminus being at Doubtless Bay in the north of the North Island.

6. **The New Caledonian Cable.**—In April, 1892, a French company, known as the Compagnie Française des Cables Télégraphiques, entered into an agreement with the French, the New South Wales, and the Queensland Governments to lay down a submarine cable between New Caledonia and Queensland in return for guarantees by the French Government to the extent of £8000, and by the Governments of New South Wales and Queensland to the amount of £2000 each annually for a period of thirty years. The cable was opened for use in October, 1893, the Australian shore-end being at Bundaberg. The Governments of New South Wales and Queensland are entitled to use the cable for the transmission of official messages up to the amount of their guarantees.

7. **Number of Cablegrams Received and Despatched, 1907 to 1909.**—The subjoined table shews the number of cablegrams received and despatched in the Commonwealth from 1907 to 1909 :—

CABLEGRAMS RECEIVED AND DESPATCHED, COMMONWEALTH, 1907 to 1909.

Particulars.	Cablegrams Received.			Cablegrams Despatched.			Total Cablegrams Received and Despatched.		
	1907.	1908.	1909.	1907.	1908.	1909.	1907.	1908.	1909.
Number... ...	219,854	221,976	221,442	230,808	231,214	231,701	450,662	453,190	453,143

The following table shews the total number of cablegrams received and despatched in each State during the year 1909. The figures given are exclusive of interstate cablegrams, which are classed as interstate telegrams (See § 2 hereof) :—

NUMBER OF CABLEGRAMS RECEIVED AND DESPATCHED IN EACH STATE, 1909.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.†	C'wealth. *
Number received ...	102,785	73,645	9,317	18,433	11,707	5,555	221,442
,, despatched...	108,031	75,649	10,735	15,883	15,313	6,090	231,701
Total	210,816	149,294	20,052	34,316	27,020	11,645	453,143

* Exclusive of interstate cablegrams, which are included with interstate telegrams (see § 2 *ante*).

It may be seen that the figures given in the above table for Tasmania and the Commonwealth are exclusive of interstate cablegrams. In 1909 the number of such cablegrams received in Tasmania was 146,687, and the number despatched 135,959, giving a total of 282,646.

8. **Lengths of Cable Routes.**—The following table gives the lengths of various cable routes :—

LENGTHS OF CABLE ROUTES.

Via Roebuck Bay.	Miles.	*Via* Port Darwin.	Miles.	*Via* South Africa.	Miles.
Perth to Roebuck Bay ...	1,485	Adelaide to Port Darwin	2,134	Perth to Mauritius ...	4,417
Roebuck Bay to Banjoewangie	970	Port Darwin to Banjoewangie	1,150	Mauritius to Durban ...	1,786
Banjoewangie to London	9,841	Banjoewangie to London	9,841	Durban to Cape Town ...	800
				Cape Town to Madeira ...	5,715
				Madeira to Penzance ...	1,341
				Penzance to London ...	260
Total	12,296	Total	13,125	Total	14,319

Via Vancouver.	Miles.	*Via* Russia.	Miles.
Southport (Queensland) to Norfolk Island	963	Sydney to Port Darwin	2,992
Norfolk Island to Suva (Fiji)	1,129	Port Darwin to Hong Kong	4,237
Suva to Fanning Island	2,351	Hong Kong to Possiet Bay	2,647
Fanning Island to Bamfield (Canada) ...	3,980	Possiet Bay to Libau	6,399
Across Canada	3,450	Libau to Newbiggin (England)	1,657
Canada to Ireland	2,450		
Total	14,323	Total	17,932

9. **Cable Rates.**—In 1872 the cable rate to England was nine guineas for twenty words, but when word rates were brought into general use in 1875, the rate between Great Britain and Australia was fixed at ten shillings and sixpence, subsequently altered to ten shillings and eightpence. This remained the standard rate for eleven years, when the Eastern Extension Telegraph Company reduced it in 1886 to nine shillings and fourpence a word for ordinary messages, to seven shillings and a penny for Government messages, and to two shillings and eightpence a word for press messages. At a conference of the postal and telegraphic authorities held in March, 1891, the proposal to reduce the rates to four shillings a word for ordinary messages, three shillings and eightpence for Government, and one shilling and tenpence for press messages was agreed to, the States of New South Wales, Victoria, South Australia, Western Australia, and Tasmania undertaking to make good half the loss which the Eastern Company might suffer through such reductions. The States guaranteed to the company one-half of the amount of receipts short of the sum of £237,736—the amount received by the company in 1889 in respect of cable charges—the other half to be borne by the company. The Government of South Australia was also guaranteed by the other contracting States against any loss to the revenue which the lower cable rates might cause in the working of the overland lines. Queensland subsequently joined the other States in these guarantees. Owing to various circumstances the cable traffic did not respond to the reductions, and heavy losses were incurred. It was therefore decided at a conference held at Melbourne to increase the rates for ordinary messages to four shillings and ninepence per word. The new rates came into force on the 1st January, 1893, concurrently with an agreement under which New Zealand joined the guarantees to the company and to South Australia.

(i.) *Present Rates to Great Britain.* On the acceptance by three of the States of the terms offered by the Eastern Extension Telegraph Company for the construction of a

cable *via* South Africa the rate for ordinary messages was reduced in May, 1900, to four shillings a word. It was further reduced to three shillings and sixpence in January, 1901, and to three shillings in January, 1902, at which amount the standard rate by all routes for cablegrams to Great Britain has since remained. The scale of reductions is governed by a revenue standard, and when the latter averages £330,000 per annum a further reduction to two shillings and sixpence will be made. In July, 1909, the "through" charge for press cables was reduced from one shilling to ninepence per word.

(ii.) *Rates to New Zealand.* As a result of the completion of the New Zealand branch of the Pacific cable in 1902, the rates charged for cablegrams between Australia and New Zealand, except to and from Tasmania, were uniformly reduced to fourpence-halfpenny per word. Between New Zealand and Tasmania the charge was fixed at five-pence-halfpenny a word, but it has since been reduced to fourpence-halfpenny. The charge for ordinary cablegrams from New Zealand to Great Britain was reduced from the 1st June, 1902, from five shillings and twopence to three shillings and fourpence a word, and has since been further reduced to three shillings a word.

10. **Subsidised Press Cable Service.**—In October, 1909, a Select Committee of the Commonwealth Senate was appointed to report upon the question of the supply, conditions of sale, and distribution, which control the Press Cable Service within and from outside the Commonwealth. A majority report of this Committee was issued in December, 1909, and recommended (*a*) the completion of an "All Red" cable route *via* Canada, (*b*) the conditional subsidisation of a press cable association, (*c*) the utilisation of the High Commissioner's office for the dissemination in Australia of Empire news, and (*d*) the amendment of the Copyright Act in regard to cables.

In accordance with the recommendations of this Committee the Commonwealth has granted a subsidy of £6000, extending over a period of three years, to the Independent Press Cable Service, on the conditions that at least 6000 cable words are supplied each week, to be sent *via* Pacific, and that any newspaper proprietary in the Commonwealth is permitted to become a subscriber at rates approved by the Government.

11. **Cable Subsidies paid by each State, 1901 to 1909.**—The agreement between the State Governments and the Eastern Extension Telegraph Company expired on the 30th April, 1900. Since the year 1895 the amounts guaranteed—£237,736 to the company and £37,552 to South Australia—have been met by the receipts, and the contracting States have, therefore, not been called upon to contribute.

(i.) *Total Subsidies Paid, 1901-9.* The following table shews the total amounts paid by way of cable subsidies for the calendar year 1901, and from 1903 to 1909 inclusive:—

TOTAL AMOUNT OF CABLE SUBSIDIES PAID, 1901 to 1909.

Year.	1901.	1903.	1904.	1905.	1906.	1907.	1908.	1909.
Amount ... £	13,207	38,056	37,911	35,160	24,997	30,837	29,313	40,898

(ii.) *Subsidies Paid by each State, 1909.* The subjoined statement shews the amounts paid by each State in respect of each cable service during the year 1909:—

AMOUNTS PAID BY THE SEVERAL STATES IN RESPECT OF EACH SUBSIDISED CABLE SERVICE, 1909.

State.	Tasmania-Victoria.	New Caledonia.	Pacific.	Total.
	£	£	£	£
New South Wales	...	2,000	6,932	8,932
Victoria	5,135	...	6,769	11,904
Queensland	...	2,000	11,932	13,932
South Australia	1,587	...	...	1,587
Western Australia	1,043	...	...	1,043
Tasmania	3,500	...	...	3,500
Commonwealth ...	11,265	4,000	25,633	40,898

As the agreement in connection with the Tasmanian cable expired in 1909, and as new cables have been laid by the Commonwealth Government (see page 787 *ante*), the guarantees were, in the course of the year 1909, reduced to those in connection with the New Caledonia and Pacific cables.

§ 4. Telephones.

1. **Development of Telephone Services.**—The Postal Department has established telephone services in all the capital towns and in many of the important centres of population throughout the Commonwealth. Particulars as to the revenue from telephone services in each State for the years 1901 to 1909 are given on page 782 *ante*, while particulars of the expenditure on telephone works in each State for the year 1909 are given in a subsequent table on the following page.

(i.) *Number of Telephone Exchanges, etc., in Commonwealth, 1901 to 1909.* The following table shews the number of telephone exchanges, the number of telephone connections, and the length of telephone wire, exclusive of telegraph and railway telephone wire, in the Commonwealth at the end of the year 1901 and from 1905 to 1909 inclusive :—

NUMBER OF TELEPHONE EXCHANGES AND CONNECTIONS AND LENGTH OF WIRE, 1901 TO 1909.

Particulars.	1901.	1905.	1906.	1907.	1908.	1909.
Telephone Exchanges ... No.	119	150	178	226	285	328
,, Connections ... ,,	24,583	35,321	38,152	47,205	54,512	62,091
Length of Wire ... miles	47,276	71,911	78,854	119,052	145,572	166,489

(ii.) *Number of Telephone Exchanges, etc., in each State, 1909.* The following table gives corresponding particulars for each State at the end of 1909 :—

TELEPHONE EXCHANGES, CONNECTIONS, AND LENGTH OF WIRE IN EACH STATE, 1909.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Cwlth.
Tel. Exchanges No.	132	56	55	25	38	22	328
,, Connections ,,	25,682	17,004	8,017	4,109	5,142	2,137	62,091
Length of Wire miles	69,332	54,788	17,306	10,359	12,223	2,481	166,489

2. **Telephone Rates.**—The charges mentioned in the table hereunder are payable for the different classes of telephone services specified therein :—

TELEPHONES.—RENTAL CHARGES, 1910-11.

In Telephone Networks having a Population of—	Radius of Network with Main Exchange as Centre.	Minimum Annual Charge— For an Exclusive Service.	For each Subscriber or Instrument on a Two-party Line.	For each Subscriber or Instrument on a Three or more party Service.
	Miles.	£ s. d.	£ s. d.	£ s. d.
From 1 to 10,000	5	3 0 0	2 10 0	2 0 0
„ 10,001 to 100,000 ...	10	3 10 0	2 15 0	2 5 0
„ 100,001 upwards ...	10	4 0 0	3 0 0	2 10 0

It is provided that for all effective calls originated the subscriber will be charged the following rates:—(*a*) For calls not exceeding 2000 half-yearly, two calls for one penny; and (*b*) for calls above 2000 half-yearly, three calls for one penny.

Another regulation permits persons occupying offices in the same building, or occupying the same private residence, to subscribe jointly under one exchange number (in addition to rental as for one person at the respective rates prescribed) of £1 per annum for each additional subscriber. This fee covers the insertion of the additional subscriber's name in the telephone list. If additional instruments are required the subscribers must pay the rates prescribed for party lines.

3. **Miscellaneous Particulars, 1909.**—The following table gives various interesting particulars of the operation of the telephone services in each State for the year 1909 :—

PARTICULARS OF OPERATION OF TELEPHONE SERVICES, 1909.

Particulars.		N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	Cwlth.
Telephone Exchanges	No.	132	56	55	25	38	22	328
Public Telephone Bureaux ...	No.	236	1,009	188	268	127	264	2,092
Extension Lines—								
Metropolitan	No.	3,851	3,630	509	207	1,060	227	9,484
Country	No.	558	627	394	53	312	117	2,061
Total	No.	4,409	4,257	903	260	1,372	344	11,545
Private Lines—								
Metropolitan	No.	353	232	104	246	140	17	1,092
Country	No.	1,056	209	329	209	39	171	2,013
Total	No.	1,409	441	433	455	179	188	3,105
Connections—								
Central Exchange	No.	6,058	6,543	3,205	2,948	1,942	1,043	21,739
Suburban Exchanges	No.	12,181	6,780	488	691	1,206	28	21,374
Country Exchanges	No	7,443	3,681	4,324	470	1,994	1,066	18,978
Total	No.	25,682	17,004	8,017	4,109	5,142	2,137	62,091
Telephone instruments in use ...	No.	31,888	23,928	9,108	6,506	6,514	3,056	81,000
Rental received	£	149,453	107,976	39,567	31,825	30,654	12,224	371,699
Length of wire opened during year...	Miles	9,638	6,235	2,423	1,584	989	256	21,125
Total length of wire at end of year...	Miles	69,332	54,788	17,306	10,359	12,223	2,481	166,489
Total cost to end of year ...	£	816,255	*431,254	262,053	219,075	185,827	80,743	1995,207

* Capital value of telephone networks (excluding telephone trunk lines) on 30th June, 1909.

4. **Financial Position of Telephone Branch.**—In 1909 an investigation into the financial position of the telephone branch of the Postmaster-General's Department was commenced, and in December of that year a report was issued dealing with the telephone accounts of the system in the State of Victoria. This report shews that during each of the years 1901 to 1908 there was a profit on the working of the system, amounting in all to £150,580; in the financial year 1908-9 there was a loss of £7789, giving a net profit up to the 30th June, 1909, of £142,791.

The following table shews the revenue and expenses of the Melbourne metropolitan network during each year of Federal control, the expenses comprising working expenses, maintenance, depreciation, rent, interest on capital, insurance, and head-office charges:—

MELBOURNE METROPOLITAN TELEPHONES.—REVENUE AND EXPENSES, 1901 to 1909.

Particulars.	Four mths. to 30th June, 1901.	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.	1907-8.	1908-9.
Revenue £	16,392	56,733	62,720	71,077	73,818	80,118	88,828	89,466	92,960
Expenses £	11,225	36,692	44,234	49,169	54,671	60,844	66,383	83,924	100,455

The total revenue for the period specified in the above table was £632,112, and the total expenses £507,597, giving a net profit on metropolitan lines of £124,515, out of a total net profit on all lines of £142,791. It is stated in the report that the decrease in profit 1907-8 and the loss in 1908-9 are attributable to the introduction of the measured system of telephone rates introduced in February, 1907.

SECTION XIX.

COMMONWEALTH FINANCE.

§ 1. General.

1. **Financial Provisions of the Constitution.**—The main provisions of the Constitution relating to the initiation and development of the financial system of the Commonwealth are those contained in Chapter IV., "Finance and Trade," being sections 81 to 105 of the Constitution Act. Two other sections which have a most important bearing on questions of Commonwealth finance are sections 69 and 51.

2. **Departments Transferred or Transferable under Constitution.**—In section 69 it is provided that the Departments of Customs and Excise in each State should become transferred to the Commonwealth on its establishment, and that on a date or dates to be proclaimed by the Governor-General after the establishment of the Commonwealth the following departments should become transferred:—

(i.) Posts, telegraphs, and telephones.
(ii.) Naval and military defence.
(iii.) Lighthouses, lightships, beacons and buoys.
(iv.) Quarantine.

Under proclamation dated 12th February, 1901, and published in the Commonwealth *Gazette* of the 14th of that month, the Departments of Posts, Telegraphs, and Telephones in each State became transferred to the Commonwealth as from the 1st March, 1901, while under a similar proclamation dated 19th February, 1901, and gazetted on the 20th, the Departments of Naval and Military Defence in each State also became transferred to the Commonwealth as from 1st March, 1901. In the case of Quarantine, an Act (No. 3 of 1908) has been passed and control has tentatively been assumed by the Commonwealth.

The requisite proclamation of transfer has not yet been made in the case of departments dealing with "Lighthouses, lightships, beacons, and buoys," nor has any legislation relative thereto been passed by the Federal Parliament, although the matter was before the legislature, in the form of a bill, during the sessions of 1909 and 1910. These departments, therefore, still remain under State control.

3. **Departments Transferable by Means of Commonwealth Legislation.**—In addition to the departments here mentioned which pass to the Commonwealth either automatically or by proclamation, there are several others whose duties the Commonwealth is empowered to undertake after the passing by the Commonwealth of the legislation necessary to authorise the assumption of such duties. These are referred to in section 51 of the Constitution, which contains a statement of all matters respecting which power is (subject to the Constitution) conferred on Parliament "to make laws for the peace, order and good government of the Commonwealth." The matters contained in this

section include those already mentioned as being covered by section 69. The principal matters involving for the due performance of the duties connected therewith the creation or transfer of departments of the Public Service are:—

(i.) Trade and commerce.
(ii.) Taxation.
(iii.) Bounties on production or export of goods.
(iv.) Postal, telegraphic, telephonic, and other like services.
(v.) Naval and military defence.
(vi.) Lighthouses, lightships, beacons, and buoys.
(vii.) Astronomical and meteorological.
(viii.) Quarantine.
(ix.) Census and statistics.
(x.) Bankruptcy and insolvency.
(xi.) Copyrights, patents, and trade marks.
(xii.) Naturalisation and aliens.
(xiii.) Marriage.
(xiv.) Divorce and matrimonial causes.
(xv.) Invalid and old-age pensions.
(xvi.) Immigration and emigration.
(xvii.) Conciliation and arbitration.

4. **Commonwealth Departments.**—As a result of legislation passed from time to time in accordance with section 51, various departments and sub-departments have been transferred from the States to the Commonwealth, whilst other departments necessary for the due performance of the Commonwealth functions have been brought into existence. In the former class are such departments as those of Patents, Trade Marks, Copyrights, Designs, Naturalisation and Meteorology, while in the latter are the Ministerial Departments of External Affairs, Home Affairs, Treasury, Trade and Customs, Defence, Attorney-General and Postmaster-General, as well as such general departments as Public Service Commissioner's Office, Treasury, Audit Department, Crown Law Department, Bureau of Census and Statistics, and Federal Land Tax Office. It may, therefore, be said that, so far as its financial aspect is concerned, the effect of Federation up to to the present time has been the transfer from States to Commonwealth of the revenue obtainable from the great revenue-producing Departments of Customs and Excise, and of the expenditure connected with various departments whose number is gradually increasing, and that, in addition, the various functions of the Commonwealth have necessitated further new expenditure.

5. **Adjustment of Accounts between Commonwealth and States.**—The fact that the Departments of Customs and Excise were responsible in the several States for the production of a very large proportion of the total revenues of the States, and that the financial relief afforded to the States by means of the transfer of expenditure to the Commonwealth would not, at least initially, be at all commensurate with this transfer of revenue, naturally led to the inclusion in the Constitution of a provision for the repayment to the States of surplus Commonwealth revenue. The means to be adopted for securing an equitable allocation of such repayment amongst the several States received very extensive consideration at the several conventions at which the framing of the Constitution took place, and the basis ultimately agreed upon was that involving for at least ten years after the establishment of the Commonwealth the provisions of what is generally known as the Braddon clause (section 87), and for at least five years after the imposition of uniform duties of Customs, the scheme of allocation which has become known as the "*book-keeping system.*" (Sections 89 and 93.)

6. **The "Braddon" Clause.**—This clause (section 87 of the Constitution) is so called after Sir Edward Braddon, a Tasmanian delegate to the Federal Convention of 1897 and

1898, by whom it was introduced. In its original form the clause provided that for all time the Commonwealth should return to the States not less than three-fourths of the net revenue of the Commonwealth from duties of Customs and Excise, not prescribing, however, what should be returned to *each* State. At the Melbourne session of the Federal Convention, held in 1898, provision was made that surplus revenue, instead of being returned to a State, might be applied towards the payment of interest on debts of that State taken over by the Commonwealth, and at the Premiers' Conference, held in Melbourne in 1899, a further amendment of the clause was effected by limiting its operations to a "period of ten years after the establishment of the Commonwealth, and thereafter until Parliament otherwise provides." The provisions of this clause *per se* were held to be complied with if the total amount returned to the States as a whole was not less than three-fourths of the total net revenue from Customs and Excise, and the Commonwealth was not under an obligation to return to each State three-fourths of the net Customs and Excise revenue collected in respect thereof. Thus, since the establishment of Federation, although the total amount of surplus Commonwealth revenue distributed amongst the States has in every year except 1907-8, 1908-9, and 1909-10 largely exceeded three-fourths of the total net revenue from Customs and Excise, the amount paid to one of the States, viz., Queensland, has in several of these years fallen short of three-fourths of the net Customs and Excise revenue collected in respect of that State. This occurred in the years 1901-2, 1903-4, 1904-5, 1907-8, 1908-9, and 1909-10, and was due in a large measure to the heavy expense involved in working the Commonwealth departments in that State. The amount returned to Tasmania for 1907-8, 1908-9, and 1909-10, also fell short of three-fourths of the net Customs and Excise Revenue collected in respect of that State, while a similar shortage occurred in the two latter years in Victoria and Western Australia.

7. **The "Book-keeping System."**—The scheme set forth in the Constitution for determining the amount to be paid to the several States is contained in sections 89 and 93, the former of which relates to the period prior to the imposition of uniform duties of Customs, the latter to the first five years after the imposition of such duties, and thereafter "until Parliament otherwise provides." The principle involved in this scheme is that of crediting each State with the Commonwealth revenue collected in respect of that State, and of debiting it with the expenditure incurred on its behalf in connection with transferred departments, as well as its share on a *per capita* basis of the new expenditure of the Commonwealth. On this account the method of allocation provided by the Constitution became very generally known as the "*book-keeping system.*" As the imposition of uniform duties of Customs and Excise took place throughout the Commonwealth on 9th October, 1901, the five years provided for in section 93 expired on 8th October, 1906, and consequently the "*book-keeping system,*" though remaining in force until 30th June, 1910, was liable to be changed at any time by the Commonwealth Parliament. In section 93 provision was made that the duties chargeable on goods imported into one State and consumed in another should be credited to the consuming State, the evident intention being that of safeguarding the interests of such States by allowing to each the revenue which its citizens actually contributed, since presumably the duty ultimately falls upon the consumer. The balance in favour of any State was payable monthly by the Commonwealth.

8. **Western Australian Sliding Scale.**—Owing to the exceptional circumstances of Western Australia, and the fact that the immediate introduction of interstate freetrade would seriously interfere with the development of the State, through the diminution in the funds at the disposal of its Treasurer, provision was made in section 95 of the Constitution for the retention of interstate duties by Western Australia during the five years after the imposition of uniform duties, such duties to be collected by the Commonwealth. It was stipulated that during the first of these years the duty so imposed on any goods should not exceed the duty chargeable on the goods under the law of Western Australia in force at the imposition of uniform duties, and that during the succeeding

years the amount imposed should not exceed four-fifths, three-fifths, two-fifths, and one-fifth respectively, and should cease at the expiration of the fifth year. This special concession to Western Australia, known as the "*Western Australian special tariff*," came to an end on 8th October, 1906, since when trade between all the States has been free. The amount collected under this special tariff during the five years of its operation from 9th October, 1901, to 8th October, 1906, was as follows:—

DUTY COLLECTED UNDER W.A. SPECIAL TARIFF, 1901-2 to 1906-7.

Year ... — ...	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.	Total.
Amount ... £	201,569	233,467	196,936	142,549	77,666	16,776	868,963

9. **Special Assistance.**—A clause (section 96 of the Constitution) which has a very important bearing on the financial relations of the States and the Commonwealth was inserted by the Premiers' Conference of 1899. This clause provides that the Commonwealth Parliament may grant financial assistance to any State on such terms and conditions as the Parliament thinks fit. It is said to have been introduced with the object of rendering the Constitution more elastic in the matter of aid to the States than would be possible if the Braddon clause and the book-keeping system were rigidly adhered to. No claim for such special assistance has yet been made on the part of any of the States, although it appears that the framers of the clause anticipated that it might be required during the early years of Federation.

10. **Transfer and Consolidation of State Debts.**—Under section 105 of the Constitution power is given to the Commonwealth Parliament to take over from the States either the whole of the public debts of the States as existing at the establishment of the Commonwealth, or a proportion of those debts calculated on a population basis, and to defray the interest payable in respect of such debts from the portions of the surplus revenue of the Commonwealth payable to the several States. The prospective savings in the matter of interest to be effected by means of the consolidation of the State debts formed a strong argument in pre-federal days for those supporting the federal movement. A drawback to the scheme provided for in the Constitution lay in the fact that under it the maximum amount of debt which could be assumed by the Commonwealth was slightly more than two hundred millions, as existing at the establishment of the Commonwealth, whereas since that date an addition of upwards of fifty millions had been made to the debts of the States. A "proposed law" to provide for an amendment of the Constitution, allowing the Commonwealth unlimited power to assume States debts, was passed by the Federal Parliament in the session of 1909, and the requisite referendum in connection with the amendment took place at the General Elections on 13th April, 1910, when the proposed law received the endorsement of the electorate.

11. **Disadvantages of the Book-keeping System.**—Under the book-keeping system of regulating the financial relations of the States and Commonwealth an endeavour was made to distribute the surplus revenue in the exact proportion in which it had been contributed by the several States. If these be regarded as States which had merely transferred some of their ordinary functions to the Commonwealth, the crediting each with the revenue received in respect to itself, and debiting it with the expenditure which the administration of Commonwealth affairs on its behalf had occasioned, might be deemed to be as equitable as any method that could be suggested. There were, however, certain practical objections to such a system, which may be summarised as follows :—

(i.) The trouble and expense which the necessary record entailed.
(ii.) The practical impossibility of ensuring that in every case a consuming State would be duly credited with revenue collected on its behalf in a distributing State.
(iii.) The difficulty involved in equitably determining the amount to be debited to the several States in respect of general Commonwealth expenses.
(iv.) The uncertainty on the part of the State Governments as to the amount which would become available.
(v.) The impossibility of securing independent State and Commonwealth finance.

12. **Proposals to Modify Book-keeping System.**—Various proposals were from time to time made for modifying the "book-keeping" system in such a manner as to obviate certain of its inherent disadvantages. The principal of these proposals were those which may be classified under the following heads :—

(i.) A *per capita* distribution of surplus.
(ii.) Payment of a fixed annual sum.
(iii.) Payment of a fixed annual amount per head.
(iv.) Increase in liability transferred to Commonwealth.

Some of the proposals that were made involved features of more than one of the systems here specified, and in certain cases combined them with those of the book-keeping system. A dissertation on the merits and demerits of any of the proposals would be beyond the scope of the present publication, but it may be noted that the scheme put forward by Sir George Turner when Commonwealth Treasurer was based on an increase in the liability transferred to the Commonwealth; that the scheme of Sir John Forrest and that of Sir William Lyne were based mainly on the payment of a fixed annual sum; while the scheme agreed to by the Commonwealth and State authorities in conference in 1909 and subsequently approved by the Federal Parliament was based on the payment of a fixed annual amount (25s.) per head of population. The scheme finally adopted by Mr. Fisher and ultimately assented to on 2nd September, 1910, retains this fixed annual payment of 25s. per head of population for a period of ten years.

13. **Interstate Conferences.**—Since the establishment of the Commonwealth, conferences of State Ministers have been held from time to time, at which proposals for adjusting the financial relations between the States and the Commonwealth have been considered. At the conference held in Melbourne in October, 1906, and that held in Brisbane in May, 1907, the scheme put forward by Sir John Forrest was very fully discussed, and, in so far as the proposals for the allocation of surplus Commonwealth revenue are concerned, was, with some minor amendments, agreed to. The proposals made by Sir John Forrest for the transfer of State debts did not, however, meet with the approval of the conferences. After the retirement of Sir John Forrest from the Commonwealth Ministry, his scheme was abandoned by the Commonwealth Government. A fresh proposal by Sir William Lyne was substituted for it, and was considered by the Conference of Premiers held in Melbourne in 1908, who expressed their dissent from its provisions. A further Conference of Premiers was held in Hobart in March, 1909, at which a scheme was drawn up providing for the unlimited extension of the Braddon clause in an amended form, the amount returnable to the States to be not less than three-fifths of the gross revenue from Customs and Excise nor less than £6,750,000 in any one year, and a special concession to be made in the case of Western Australia. In August, 1909, a conference between Commonwealth and State authorities was held in Melbourne at which an agreement was arrived at between the Prime Minister of the Commonwealth and the Premiers of the several States. This Agreement was subsequently made the basis of a proposed law for amending the Federal Constitution, which, during the session of 1909, was passed by the statutory majority in both Houses of the Federal Parliament. It is not necessary to reproduce the exact provisions of the Agree-

ment, which were given *in extenso* in the third issue of the Year Book. The proposed law was submitted to a referendum at the elections of 13th April, 1910, and rejected.

14. **Financial Arrangement between Commonwealth and States.**—The financial relations between Commonwealth and States are now regulated by the "Surplus Revenue Act 1910," which amended the "Surplus Revenue Act 1908." The most important sections are given hereunder in full :—

3. "From and after 31st December, 1910, section 87 of the Constitution shall cease to have effect, so far as it affects the power of the Commonwealth to apply any portion of the net revenue of customs and excise towards its expenditure, and so far as it affects the payment of any balance by the Commonwealth to the several States, or the application of such balance towards the payment of interest on the debts of the several States taken over by the Commonwealth."

4. (*a*) "The Commonwealth shall during the period of ten years beginning on 1st July, 1910, and thereafter until the Parliament otherwise provides, pay to each State by monthly instalments, or apply to the payment of interest on debts of the State taken over by the Commonwealth, an annual sum amounting to twenty-five shillings per head of the number of the people of the State:

Provided that in the six months ending the 30th June, 1911, the Commonwealth may deduct from the amounts payable in pursuance of this section the amounts set out in the Schedule."

(*b*) "If in order to comply with section 87 of the Constitution the sums paid and applied under this section during the six months ending on 31st December, 1910, amount to more than twelve shillings and sixpence per head of the number of the people of the several States, the amounts paid and applied under this section during the next six months shall be correspondingly reduced, so that the amounts so paid and applied during the whole of the financial year ending on 30th June, 1911, shall not amount to more than twenty-five shillings per head of the number of the people of the several States, less the deductions provided for in the proviso to the last subsection."

5. (*a*) "The Commonwealth shall during the period of ten years beginning on the 1st July, 1910, and thereafter until Parliament otherwise provides, pay to the State of Western Australia, by monthly instalments, an annual sum which in the first year shall be two hundred and fifty thousand pounds, and in each subsequent year shall be progressively diminished by the sum of ten thousand pounds.

(*b*) One-half of the amount of the payments so made shall be debited to all the States (including the State of Western Australia) in proportion to the number of their people, and any sum so debited to a State may be deducted by the Commonwealth from any amount payable to the State in pursuance of this Act."

Section 6 provides for the final payment of any surplus revenue there may be to the States "in proportion to the number of their people."

Section 7 provides that "the number of the people" in any financial year shall be deemed for the purposes of this Act to be the number estimated by the Commonwealth Statistician as existing on the 31st December falling in that financial year.

The Schedule referred to in section 4, sub-section (*a*) is as follows:—

THE SCHEDULE.

Amounts to be deducted from payments to the States in the financial year ending 30th June, 1911.

New South Wales	£178,973
Victoria	143,092
Queensland	63,788
South Australia	30,529
Western Australia	20,113
Tasmania	13,505
	£450,000

§ 2. Consolidated Revenue Fund.

(A) Nature of Fund.

The provisions made for the formation of a Commonwealth Consolidated Revenue Fund, and the means to be adopted for operating on that fund, are contained in sections 81, 82, and 83 of the Constitution. In section 81 it is provided that "All revenues or moneys raised or received by the Executive Government of the Commonwealth shall form one Consolidated Revenue Fund, to be appropriated for the purposes of the Commonwealth in the manner and subject to the charges and liabilities imposed by this Constitution." A strictly literal interpretation of this section would appear to require all loan and trust moneys received by the Commonwealth Executive to be paid to Consolidated Revenue. It is, however, held by Quick and Garran, in their "Annotated Constitution," that the "generic word *moneys* must be controlled by the preceding specific word *revenues*, and limited to moneys in the nature of revenue." This is the view of the matter which has been adopted by the Commonwealth Treasury in the preparation of its accounts. At present the Commonwealth has no Loan Account, but certain moneys received, which are not of the nature of revenue, are paid to Trust Account. As regards expenditure from the Consolidated Revenue Fund, section 82 provides that the costs, charges, and expenses incident to the collection, management, and receipt of the Consolidated Revenue Fund should form the first charge thereon, while section 83 stipulates that "no money shall be drawn from the Treasury of the Commonwealth except under appropriation made by law." Such appropriations are either special, and as such are provided for by means of a permanent Act, or are annual, and provided for in an annual Appropriation Act.

(B) Revenue.

1. **Total Collections.**—The consolidated revenue of the Commonwealth, which in 1901-2, the first complete financial year under the new regime, amounted to £11,296,985, had, in 1909-10, reached a total of £15,540,669, an increase in eight years of £4,243,684.

Particulars concerning the total amount of revenue collected by the Commonwealth Government and credited to the several States from 1st July, 1905, to 30th June, 1910, are contained in the following table:—

CONSOLIDATED REVENUE OF THE COMMONWEALTH, 1905-6 to 1909-10.

State to which Credited.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.
	£	£	£	£	£
New South Wales ...	4,314,829	4,782,122	5,816,755	5,621,958	6,017,118
Victoria	3,292,885	3,537,602	4,063,736	3,750,161	4,054,761
Queensland	1,550,360	1,707,136	1,967,618	1,989,540	2,144,538
South Australia	987,792	1,113,450	1,355,751	1,307,621	1,482,547
Western Australia ...	1,287,103	1,216,416	1,270,732	1,166,126	1,292,568
Tasmania	448,955	476,165	544,442	515,387	549,137
Commonwealth ...	11,881,924	12,832,891	15,019,034	14,350,793	15,540,669

The revenue collected by the Commonwealth during the financial year 1907-8 was, in all the States except Western Australia, higher than in any preceding year, the large increase being mainly due to the additional revenue collected in connection with the new tariff introduced on the 8th August, 1907. In the case of Western Australia the year in which the maximum collection of Commonwealth revenue took place was 1902-3, a continuous decline having been experienced from that year until 1906-7, and a slight rise for 1907-8. For 1908-9 the revenue in all the States except Queensland was lower than that for the preceding year, but the total for the Commonwealth shews a substantial excess over any year prior to 1907-8. For 1909-10 the revenue in all the States shewed a marked increase, and the total for the Commonwealth was the largest ever collected.

2. **Collections per Head.**—In the table given hereunder particulars are furnished of the amount of Commonwealth revenue per head of population collected in respect of each State for the last five years:—

COMMONWEALTH REVENUE PER HEAD OF POPULATION, 1905-6 to 1909-10.

State to which Credited.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
New South Wales ...	2 17 10	3 2 8	3 14 2	3 10 8	3 14 2
Victoria	2 14 1	2 17 5	3 5 1	2 19 0	3 2 1
Queensland	2 18 9	3 3 10	3 12 8	3 12 0	3 14 11
South Australia	2 12 3	2 18 0	3 9 1	3 4 3	3 11 3
Western Australia ...	5 1 0	4 12 11	4 17 2	4 7 4	4 14 6
Tasmania	2 9 7	2 12 10	2 19 2	2 15 6	2 18 9
Commonwealth ...	2 18 8	3 2 4	3 11 7	3 7 2	3 11 0

In four of the States, viz., Western Australia, Queensland, New South Wales, and South Australia, the revenue per head for 1909-10 exceeded the average for the Commonwealth. Throughout the period under review the revenue per head has been highest in Western Australia and lowest in Tasmania, with a distinct tendency in evidence for the former to diminish and the latter to increase.

3. **Proportions Collected in respect of the several States.**—In the following table particulars are given of the percentage which each State's contribution for the several years was on the total Commonwealth revenue:—

PROPORTION OF REVENUE COLLECTED IN RESPECT OF EACH STATE, 1905-6 TO 1909-10.

State.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.
	%	%	%	%	%
New South Wales	36.31	37.26	38.73	39.18	38.72
Victoria	27.71	27.57	27.06	26.13	26.09
Queensland	13.05	13.30	13.10	13.86	13.80
South Australia	8.32	8.68	9.03	9.11	9.54
Western Australia	10.83	9.48	8.46	8.13	8.32
Tasmania	3.78	3.71	3.62	3.59	3.53
Commonwealth ...	100.00	100.00	100.00	100.00	100.00

A comparison of the percentages for 1909-10 with those for 1905-6 reveals the fact that, whilst the proportion of the Commonwealth revenue contributed by New South Wales has during the period increased considerably and the proportions contributed by Queensland and South Australia have increased moderately, those for Victoria, Western Australia, and Tasmania exhibit decreases, the extent of the decrease being most marked in the case of Western Australia, where a fall in percentage took place from 10.83 in 1905-6 to 8.32 in 1909-10. This rapid decline in Western Australia is due to a variety of causes, the three most important being :—(i.) The abolition of interstate duties, (ii.) the increase in interstate trade, and (iii.) the gradual tendency to equalisation of conditions with those existing in the eastern States.

In view of the various proposals for adjusting the financial relations of the Commonwealth and the States on a *per capita* basis, the following comparison of the proportion of Commonwealth revenue collected in respect of each State with that State's proportion of the total Commonwealth population is of considerable interest :—

COMPARISON OF REVENUE AND POPULATION PROPORTIONS, 1909-10.

Particulars.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Cwlth.
	%	%	%	%	%	%	%
Percentage on Commonwealth revenue	38.72	26.09	13.80	9.54	8.32	3.53	100.00
,, ,, ,, population	37.07	29.80	13.09	9.51	6.25	4.28	100.00

In the case of New South Wales, Queensland, Western Australia, and South Australia the revenue percentage is higher than the population percentage, while in Victoria and Tasmania the population percentage is the higher. The most extensive proportionate divergences occur in the cases of Western Australia and Tasmania.

4. **Details of Revenue, 1909-10.**—The principal revenue-producing departments of the Commonwealth are the Customs, Excise, and Postal, the Customs collections for 1909-10 representing more than 60 per cent. of the total revenue, Excise about 13½ per cent., and Postal about 24 per cent. Details of the Commonwealth revenue collected in respect of each State for the year 1909-10 are given in the following table :—

COMMONWEALTH REVENUE, 1909-10.

Source of Revenue.	Revenue Collected in respect of—						Total Revenue Collected by C'wealth Govt.
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	
	£	£	£	£	£	£	£
Customs ...	3,789,515	2,366,701	1,243,512	942,972	824,477	338,678	9,505,855
Excise ...	706,035	682,310	342,764	142,749	160,938	52,514	2,087,310
Postal ...	1,487,748	937,820	531,593	381,013	293,680	149,887	3,731,741
Defence ...	7,942	8,048	2,986	1,085	767	1,019	21,847
Patents ...	5,493	4,707	2,400	1,577	1,339	1,128	16,644
Trade Marks, Copyrights and Designs	1,774	1,428	626	455	303	204	4,790
Quarantine ...	2,331	1,125	567	72	592	37	4,724
Coinage ...	25,821	20,752	9,118	6,624	4,356	2,975	69,646
New revenue...	23,384	18,795	8,258	6,000	3,944	2,695	63,076
Public Service Pension Funds, Repayments and Transfers	17,075	13,075	2,714	...	2,172	...	35,036
Total ...	6,017,118	4,054,761	2,144,538	1,482,547	1,292,568	549,137	15,540,669

5. **Sources of Revenue.**—The following table furnishes particulars concerning the Commonwealth revenue derived from each source during the years 1905-6 to 1909-10 :—

SOURCES OF COMMONWEALTH REVENUE, 1905-6 to 1909-10.

Sources of Revenue.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.
	£	£	£	£	£
Customs	7,089,379	7,660,874	9,341,108	8,626,521	9,505,855
Excise	1,910,106	1,987,682	2,304,244	2,217,546	2,087,310
Postal	2,824,348	3,128,574	3,300,096	3,409,426	3,731,741
Defence	8,106	5,112	13,565	5,024	21,847
Patents	23,936	18,017	17,421	15,367	16,644
Trade Marks, Copyrights, and Designs	...	6,390	8,657	6,110	4,790
Quarantine	...	...	...	...	4,724
Coinage	...	...	...	...	69,646
New revenue	11,854	12,529	25,837	35,978	63,076
Miscellaneous	14,196	13,713	8,106	...	...
Public Service Pension Funds, Repayments and Transfers	...	...	...	34,821	35,036
Total	11,881,925	12,832,891	15,019,034	14,350,793	15,540,669

The maximum annual collection of Customs revenue during the period was the total of £9,505,854 obtained during 1909-10, the nearest approach to this figure being that of £9,341,108 obtained during the financial year 1907-8. The Customs revenue for 1906-7 was practically identical with that for 1901-2. The minimum annual collection was £7,089,379 in 1905-6. In the case of Excise a maximum for the period was attained in 1907-8, followed by marked decreases in subsequent years, for which a falling off in the excise revenue on spirits and sugar was mainly responsible. In the case of Postal revenue the amounts collected have increased almost continuously from year to year, the Postal revenue for 1909-10 exceeding that for 1905-6 by 32 per cent.

6. **Customs.**—As already noted, several of the provisions of the Constitution were made dependent for their date of commencement on the imposition of uniform duties of Customs. Thus the book-keeping system and the Western Australian special tariff provisions both hinged upon the date on which the uniform duties of Customs were imposed. The Bill to provide for the collection of such duties was introduced in the Commonwealth House of Representatives on 9th October, 1901, and, in accordance with the usual practice, a resolution to protect the revenue and provide for the collection forthwith of the duties specified in the Bill, was duly carried. This date, 9th October, 1901, is consequently that on which the uniform duties of Customs are considered as having been imposed. A reference to the various enactments of the Commonwealth Legislature relative to the imposition of Customs duties will be found in Section XV., "Commerce," pages 607 to 611.

7. **Customs Revenue, 1909-10.**—The Customs revenue, after deduction of drawbacks and refunds, collected in respect of the several States during the year 1909-10, is given hereunder, details being furnished for the principal classes of dutiable articles imported :—

COMMONWEALTH CUSTOMS REVENUE, 1909-10.

Classes.	Customs Revenue Collected in respect of—						Total for Commonwealth.
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	
	£	£	£	£	£	£	£
Stimulants	938,526	549,828	378,033	162,304	233,577	67,947	2,330,215
Narcotics	375,207	266,715	135,232	79,371	91,221	46,331	994,077
Sugar	279,131	47,005	3,279	103,612	32,546	40,812	506,385
Agricultural products	340,266	212,223	116,139	67,618	89,633	29,434	855,313
Apparel and textiles ...	729,894	537,042	222,589	192,801	127,410	63,096	1,872,832
Metals and machinery	378,347	215,414	150,730	118,843	104,147	30,492	997,973
Oils, paints, etc. ...	72,720	57,416	27,386	21,831	13,882	6,142	199,377
Earthenware, etc. ...	94,716	66,432	29,887	29,063	18,953	8,440	247,491
Drugs and chemicals ...	27,927	17,585	12,188	7,843	8,742	2,613	76,898
Wood, wicker, and cane	128,575	114,036	17,187	36,855	18,972	8,571	324,196
Jewellery, etc. ...	85,273	56,144	33,583	23,209	16,255	8,285	222,749
Leather, etc. ...	94,228	69,217	31,782	28,247	22,012	7,890	253,376
Paper and stationery ...	64,417	47,258	20,927	16,753	12,194	5,982	167,531
Vehicles	50,148	25,847	17,944	19,984	5,610	2,679	122,212
Musical instruments ...	32,640	23,041	11,770	9,359	4,062	2,077	82,949
Miscellaneous articles	84,384	53,557	30,569	22,942	22,190	6,938	220,580
Other receipts ...	13,116	7,940	4,287	2,337	3,071	949	31,700
Total Customs...	3,789,515	2,366,700	1243,512	942,972	824,477	338,678	9,505,854

The figures given in the above table represent the net amount of Customs revenue credited to each State, after adjustment has been made in accordance with section 93 of the Constitution in respect of duties collected in one State on goods subsequently passing for consumption into another State.

8. **Customs Revenue for Past Five Years.**—Corresponding particulars for the Commonwealth as a whole, for the five years 1905-6 to 1909-10, are furnished in the following table :—

COMMONWEALTH CUSTOMS REVENUE, 1905-6 to 1909-10.

Classes.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.
	£	£	£	£	£
Stimulants	2,098,712	2,223,431	2,281,424	2,252,380	2,330,215
Narcotics	945,286	941,337	1,057,996	961,411	994,077
Sugar	129,692	143,830	51,499	140,343	506,385
Agricultural products	812,596	738,612	806,526	886,612	855,313
Apparel and textiles	1,416,977	1,578,414	2,063,674	1,630,490	1,872,832
Metals and machinery	482,427	625,227	1,030,519	932,944	997,973
Oils, paints, etc.	124,157	141,314	197,840	206,688	199,377
Earthenware, etc.	150,724	170,332	278,201	230,795	247,491
Drugs and chemicals	57,652	60,365	77,281	71,589	76,898
Wood, wicker, and cane	187,482	219,433	360,699	336,361	324,196
Jewellery, etc.	173,428	210,818	256,835	198,196	222,749
Leather, etc.	154,038	172,459	218,918	208,120	253,376
Paper and stationery	112,052	145,241	193,813	164,677	167,531
Vehicles	77,590	101,782	148,003	95,888	122,212
Musical instruments	50,672	60,117	90,905	72,128	82,949
Miscellaneous articles	80,112	97,403	191,782	205,697	220,580
Other receipts	35,782	30,759	35,193	32,202	31,700
Total Customs	7,089,379	7,660,874	9,341,108	8,626,521	9,505,854

It will be seen that throughout the period here dealt with the Customs revenue from stimulants and narcotics has represented, approximately, 40 per cent. of the total Customs revenue. The other principal articles from which Customs revenue was derived were "apparel and textiles," "metals and machinery," and "agricultural products." The most marked increase in the amount of duty collected is in the class of "metals and machinery," the revenue under this head for 1909-10 exceeding that for 1905-6 by £515,546.

In all cases except those of "Sugar," "Agricultural products," "Oils, paints, etc.," and "Miscellaneous articles," the revenue for 1908-9 fell short of that for 1907-8, owing mainly to the somewhat abnormal collections of 1907-8, consequent on the tariff of that year.

9. **Excise.**—The commodities on which Excise duties are levied are beer, spirits, starch, sugar, and tobacco, whilst the department also obtains a small revenue from the granting of licenses for the manufacture of stimulants and narcotics.

The revenue collected in respect of each State during 1909-10, under each of these heads, is shewn in the following table :—

COMMONWEALTH EXCISE REVENUE, 1909-10.

Particulars.	Excise Revenue Collected in respect of—						Total for Commonwealth.
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	
	£	£	£	£	£	£	£
Beer	194,893	189,868	76,588	44,607	58,819	19,728	584,503
Spirits	92,774	84,139	41,769	34,382	11,784	3,029	267,877
Starch	1,857	895	810	Dr. 235	398	172	3,897
Sugar	137,672	229,981	126,626	9,373	32,526	12,538	548,716
Tobacco	276,602	175,156	94,584	53,483	56,717	16,895	673,437
Licenses	2,237	2,271	2,388	1,139	694	151	8,880
Total Excise ...	706,035	682,310	342,765	142,749	160,938	52,513	2,087,310

Of the total Excise revenue collected, beer, spirits, and tobacco were responsible for about 73 per cent. The figures given in this table are those obtained after deducting drawbacks and refunds and making the necessary adjustments between the States in connection with goods produced or manufactured in one State and consumed in another.

10. **Excise Collections, 1905-6 to 1909-10.**—Particulars concerning the amount of Excise collected under each head during each of the years ending 30th June, 1906 to 1910, are given hereunder:—

COMMONWEALTH EXCISE REVENUE, 1905-6 to 1909-10.

Particulars.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.
	£	£	£	£	£
Beer	502,399	513,473	555,720	551,859	584,503
Spirits	276,516	285,295	351,763	243,736	267,877
Starch	24,597	27,321	25,917	23,558	3,897
Sugar	536,079	546,590	741,928	750,776	548,716
Tobacco	560,409	604,960	618,599	638,017	673,437
Licenses	10,106	10,043	10,250	9,667	8,880
Agricultural machinery	...	...	67	Dr. 67	...
Total Excise ...	1,910,106	1,987,682	2,304,244	2,217,546	2,087,310

Comparing the Excise collections for 1909-10 with those for 1905-6 it will be seen that whilst the revenue obtained from beer increased by nearly 16 per cent., and that from tobacco by about 20 per cent. during the period, the increase in revenue from sugar was only moderate, while decreases were experienced in spirits, starch, and licenses.

11. **Commonwealth Taxation.**—Under section 51, sub-section (ii.) of the Constitution, power is given to the Commonwealth Parliament to make laws with respect to taxation, but so as not to discriminate between States or parts of States. Section 90 of the Constitution makes the power of the Commonwealth Parliament to impose Customs and Excise duties an exclusive one, but it would appear that as regards all other forms of taxation the States and Commonwealth possess concurrent powers. The question of the imposition by the Commonwealth Parliament of direct taxes such as land and income taxes is one which has been the subject of considerable discussion, and the opinion has been expressed that the intention of the framers of the Constitution was that of restricting the taxation powers of the Commonwealth to the imposition of Customs and Excise duties except in cases of great national peril. Whatever the intention of the framers may have been in this matter, the Constitution itself contains no such provision, and the Commonwealth Parliament is given an absolutely free hand in the imposition of taxation. Up to the end of the financial year 1909-10 the only taxes so levied were those of Customs and Excise, referred to in detail in the foregoing paragraphs. During the 1910 session of the Federal Parliament, however, an Act—assented to on 17th November, 1910—was passed, giving to the Commonwealth the power of levying a tax upon the unimproved value of all lands within the Commonwealth which were owned by taxpayers, and not specially exempted. More detailed reference to this Act is made on page 808.

The total amounts obtained from Customs and Excise in respect of each of the States since the inauguration of Federation are given hereunder:—

COMMONWEALTH TAXATION, 1901 to 1909-10.

Year.	Customs and Excise Revenue Collected in respect of—						Total for Commonwealth.
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	
	£	£	£	£	£	£	£
Half-year to 30/6/01	1,019,008	1,356,099	710,830	351,953	491,371	221,328	4,150,589
1901-2	2,812,731	2,376,524	1,297,663	698,647	1,335,614	373,140	8,894,319
1902-3	3,478,742	2,499,014	1,260,934	689,756	1,396,002	360,607	9,685,055
1903-4	3,229,786	2,443,505	1,131,761	699,792	1,258,725	342,189	9,105,758
1904-5	3,033,617	2,488,842	1,095,476	678,880	1,172,064	330,651	8,799,530
1905-6	3,233,922	2,537,070	1,183,244	688,041	1,030,813	326,395	8,999,485
1906-7	3,573,313	2,719,431	1,277,914	781,826	952,617	343,455	9,648,556
1907-8	4,514,662	3,212,138	1,498,131	1,012,086	998,930	409,405	11,645,352
1908-9	4,263,706	2,861,968	1,500,915	956,371	887,046	374,061	10,844,067
1909-10	4,495,550	3,049,010	1,586,277	1,085,721	985,415	391,191	11,593,164

12. **Taxation per Head.**—In the following table are given particulars concerning the amount of Commonwealth taxation per head of population contributed by the several States during the period from 1st January, 1901, to 30th June, 1909:—

COMMONWEALTH TAXATION PER HEAD, 1901 to 1909-10.

Year.	Customs and Excise Revenue per Head of Population Collected in respect of—															Per head of Population of Commonwealth.		
	N.S.W.			Victoria.			Q'land.			S. Aust.			W. Aust.			Tas.					
	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
Half-yr. to 30/6/01	0	15	1	1	2	7	1	8	6	0	19	5	2	13	4	1	5	8	1	2	0
1901-2	2	0	11	1	19	3	2	11	4	1	18	2	6	17	7	2	2	10	2	6	6
1902-3	2	9	7	2	1	3	2	9	4	1	17	7	6	11	10	2	0	8	2	9	11
1903-4	2	5	3	2	0	5	2	3	11	1	17	11	5	10	11	1	18	2	2	6	5
1904-5	2	1	8	2	1	2	2	2	0	1	16	5	4	16	9	1	16	8	2	4	2
1905-6	2	3	4	2	1	8	2	4	10	1	16	5	4	0	11	1	16	1	2	4	5
1906-7	2	6	10	2	4	2	2	7	9	2	0	9	3	12	9	1	18	2	2	6	10
1907-8	2	17	7	2	11	6	2	15	4	2	11	6	3	16	5	2	4	6	2	15	6
1908-9	2	13	7	2	5	0	2	14	4	2	7	0	3	6	5	2	0	3	2	10	9
1909-10 ...	2	15	5	2	6	9	2	15	5	2	12	2	3	12	0	2	1	10	2	13	0

13. **Commonwealth Land Tax.**—(i.) *Legislation.* As previously indicated the land taxation, as far as the Commonwealth is concerned, is regulated by "The Land Tax Assessment Act 1910," No. 22 of 1910, which received assent on 17th November, 1910. Under this Act the taxable value of all the land owned by any person is deemed to be (*a*) in the case of an absentee—the total sum of the unimproved value of each parcel of the land; (*b*) in the case of an owner not an absentee—the balance of the total sum of the unimproved value of each parcel of the land, after deducting the sum of £5000. Every part of a holding which is separately held by any occupier, tenant, lessee, or owner, is deemed to be a separate parcel. All land owned by a company is considered to be owned by the shareholders of the company as joint owners, in the proportion of their interests in the paid-up capital. It may be noted that a company is never treated as an absentee, but individual shareholders who are absentees are separately assessed and liable as such. Land owned by a Mutual Life Assurance Society (except such as it holds as mortgagee in possession, or which it has acquired by virtue of a mortgage) is deemed to be owned by the Society as trustee for the Australian policy-holders in proportion to the surrender value of their policies.

(ii.) *Exemptions.* The following are the principal exemptions:—

(*a*) All land owned by a State or Municipal or other public authority.

(*b*) All land owned by any Society registered under a State Act as a friendly society, or trades-union, or building society; excepting, in the case of the latter, such land as it might acquire through the foreclosure of a mortgage.

(*c*) All land held in trust for a charitable or educational institution not carried on for the purposes of gain.

(*d*) All land used as a site for—

(1) A place of worship or place of residence for clergy, or ministers, or order of a religious society;
(2) a public library, institute, or museum;
(3) a show ground;
(4) a public cemetery;
(5) a public garden, recreation ground, or reserve;
(6) a public road;
(7) a fire-brigade station.

(iii.) *Rates.* The rates of taxation are set forth in the Land Tax Act 1910 (No. 21 of 1910) according to the following schedules:—

FIRST SCHEDULE.

Rate of tax when owner is not an absentee.

For so much of the taxable value as does not exceed £75,001 the rate of tax per pound sterling shall be one penny where the taxable value is one pound sterling, and shall increase uniformly with each increase of one pound sterling in the taxable value, in such manner that—

the increment of tax between a taxable value of £15,000 and a taxable value of £15,001 shall be 2d.; the increment of tax between a taxable value of £30,000 and a taxable value of £30,001 shall be 3d.; the increment of tax between a taxable value of £45,000 and a taxable value of £45,001 shall be 4d.; the increment of tax between a taxable value of £60,000 and a taxable value of £60,001 shall be 5d.; and the increment of tax between a taxable value of £75,000 and a taxable value of £75,001 shall be 6d.

For every pound sterling of taxable value in excess of £75,000 the rate of tax shall be 6d.

SECOND SCHEDULE.

Rate of tax when owner is an absentee.

For so much of the taxable value as does not exceed £5000 the rate of tax per pound sterling shall be one penny.

For so much of the taxable value as exceeds £5000 but does not exceed £80,001 the rate of tax per pound sterling shall be 2d. where the excess is one pound sterling, and shall increase uniformly with each increase of one pound sterling in the taxable value in such manner that—

the increment of tax between a taxable value of £20,000 and a taxable value of £20,001 shall be 3d.; the increment of tax between a taxable value of £35,000 and a taxable value of £35,001 shall be 4d.; the increment of tax between a taxable value of £50,000 and a taxable value of £50,001 shall be 5d.; the increment of tax between a taxable value of £65,000 and a taxable value of £65,001 shall be 6d.; and the increment of tax between a taxable value of £80,000 and a taxable value of £80,001 shall be 7d.

For every pound sterling of taxable value in excess of £80,000 the rate of tax shall be 7d.

14. **Postal Revenue.**—Besides the Department of Trade and Customs the only large revenue-earning Commonwealth department is that under the control of the Postmaster-General, comprising the three branches of Post, Telegraph, and Telephone. This department was taken over by the Commonwealth on 1st March, 1901, and consequently contributed only four months' revenue to the Commonwealth total for the financial period ended 30th June, 1901. Particulars relative to the postal revenue collected in respect of the several States since the federalisation of the department are given hereunder:—

COMMONWEALTH POSTAL REVENUE, 1901 to 1909-10.

Year.	Postal Revenue Collected in respect of—						Total for Commonwealth.
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	
	£	£	£	£	£	£	£
Four mths. to 30/6/01	276,936	177,931	95,586	90,703	67,735	31,774	740,665
1901-2	873,312	591,470	312,905	277,812	225,752	91,610	2,372,861
1902-3	906,798	622,700	300,737	255,214	225,244	94,037	2,404,730
1903-4	941,529	650,583	324,013	258,461	230,858	104,759	2,510,203
1904-5	980,151	683,480	331,774	266,719	257,503	112,924	2,632,551
1905-6	1,065,633	735,563	359,752	291,929	252,741	118,730	2,824,348
1906-7	1,191,489	797,972	422,346	327,269	259,688	129,810	3,128,574
1907-8	1,278,107	834,367	451,075	338,193	266,510	131,844	3,300,096
1908-9	1,319,755	856,632	476,335	345,282	272,952	138,470	3,409,426
1909-10	1,437,748	937,820	531,593	381,013	293,680	149,887	3,731,741

A comparison of the figures for 1909-10 with those for 1901-2 indicates a substantial increase in the postal revenue of all the States, ranging from 70 per cent. in the case of Queensland to 30 per cent. in that of Western Australia for the period of eight years, and representing for the whole Commonwealth an increase of about 57 per cent.

15. **Postal Revenue per Head.**—The postal revenue per head of population varies considerably in the several States, being highest in the case of Western Australia and lowest in that of Victoria. Particulars for the nine complete financial years since Federation are as follows:—

COMMONWEALTH POSTAL REVENUE PER HEAD, 1901-2 to 1909-10.

Year.	Postal Revenue per Head of Population Collected in respect of—						Per head of Population of Commonwealth.
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1901-2 ...	0 12 8	0 9 9	0 12 4	0 15 2	1 3 3	0 10 6	0 12 5
1902-3 ...	0 12 11	0 10 3	0 11 9	0 13 11	1 1 1	0 10 7	0 12 5
1903-4 ...	0 13 2	0 10 9	0 12 7	0 14 0	1 0 4	0 11 8	0 12 9
1904-5 ...	0 13 5	0 11 4	0 12 9	0 14 4	1 1 3	0 12 6	0 13 3
1905-6 ...	0 14 3	0 12 1	0 13 8	0 15 5	0 19 10	0 13 1	0 13 11
1906-7 ...	0 15 7	0 13 0	0 15 9	0 17 1	0 19 10	0 14 5	0 15 2
1907-8 ...	0 16 4	0 13 4	0 16 8	0 17 3	1 0 5	0 14 4	0 15 9
1908-9 ...	0 16 7	0 13 6	0 17 3	0 16 11	1 0 5	0 14 11	0 15 11
1909-10 ...	0 17 9	0 14 5	0 18 7	0 18 4	1 1 5	0 16 0	0 17 1

From 1903-4 onwards there has been a practically continuous increase in the postal revenue per head both in the Commonwealth and in all the States.

16. **Details of Postal Revenue, 1909-10.**—Particulars relative to postal revenue are, in the Treasury statements, now classified under six heads:—(i.) private boxes and bags; (ii.) commission on money orders and postal notes; (iii.) telegraphs; (iv.) telephones; (v.) postage, and (vi.) miscellaneous. Details under these heads concerning

the revenue collected in respect of the several States for the year ended 30th June, 1910, are given hereunder :—

COMMONWEALTH POSTAL REVENUE, 1909-10.

Particulars.	Postal Revenue Collected in respect of—						Total for Commonwealth.
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	
	£	£	£	£	£	£	£
Private boxes and bags ...	7,852	3,399	3,697	1,464	1,816	850	19,078
Commission—Money orders and postal notes	41,532	26,281	13,146	6,923	11,866	4,709	104,457
Telegraphs	223,028	146,667	112,424	102,753	76,584	19,582	681,038
Telephones	202,566	150,550	62,225	40,877	35,859	17,546	509,623
Postage	905,601	570,230	314,827	207,359	153,965	101,518	2,253,500
Miscellaneous	57,169	40,693	25,274	21,637	13,590	5,682	164,045
Total	1,437,748	937,820	531,593	381,013	293,680	149,887	3,731,741

17. **Details of Postal Revenue, 1905-6 to 1909-10.**—Particulars concerning the postal revenue of the Commonwealth for each of the financial years from 1905-6 to 1909-10 are contained in the following table :—

COMMONWEALTH POSTAL REVENUE, 1905-6 to 1909-10.

Particulars.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.
	£	£	£	£	£
Private boxes and bags ...	14,975	15,933	15,868	17,548	19,078
Commission—					
Money orders & postal notes	88,868	92,240	94,624	100,034	104,457
Telegraphs	565,422	588,167	650,426	642,548	681,038
Telephones	352,214	388,226	410,741	441,551	509,623
Postage	1,754,790	1,968,950	2,043,777	2,111,333	2,253,500
Miscellaneous	48,079	75,058	84,660	96,412	164,045
Total	2,824,348	3,128,574	3,300,096	3,409,426	3,731,741

18. **Revenue from Patents.**—Under the Commonwealth Patents Act 1903, which was assented to on 22nd October, 1903, and came into force on 1st June, 1904, the complete control of the Patents administration of Australia passed from the several State Governments to that of the Commonwealth, which, under section 19 (*a*) of the Act mentioned, was authorised to collect for each State the fees to which it was entitled under the State Act in respect of proceedings then pending.

The revenue collected in respect of each of the States since the Act came into force is shewn in the following table :—

COMMONWEALTH PATENTS REVENUE, 1903-4 to 1909-10.

Year.	Patents Revenue Credited to—						Total for Commonwealth.
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	
	£	£	£	£	£	£	£
1903-4 (June only) ...	436	432	226	170	120	134	1,518
1904-5	2,035	2,899	1,621	1,244	1,129	1,631	10,559
1905-6	6,532	6,609	3,303	2,407	2,318	2,767	23,936
1906-7	4,976	4,702	2,908	1,772	1,997	1,662	18,017
1907-8	5,424	4,631	2,590	1,607	1,755	1,414	17,421
1908-9	5,101	4,433	2,240	1,521	1,221	851	15,367
1909-10	5,493	4,707	2,400	1,577	1,339	1,128	16,644

It may be noted that, in their financial statement for 1903-4, the Commonwealth Treasury have credited the patents revenue for that year partly to "Miscellaneous Receipts" and partly to "New Revenue."

19. **Revenue from Trade Marks, etc.**—Under the several Acts of the Commonwealth Legislature relating to trade marks, copyrights, and designs, the Commonwealth Government has assumed the exclusive administration of such matters, and now collects all revenue accruing therefrom. The following table gives particulars of the amount credited to the several States since this item first appeared in the Commonwealth accounts:—

COMMONWEALTH TRADE MARKS, COPYRIGHTS, AND DESIGNS REVENUE, 1906-7 TO 1909-10.

Year.	Trade Marks, etc., Revenue credited to—						Total for Commonwealth.
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	
	£	£	£	£	£	£	£
1906-7	2,305	1,896	855	594	437	303	6,390
1907-8	3,242	2,568	1,112	807	546	382	8,657
1908-9	2,279	1,815	786	579	384	267	6,110
1909-10	1,774	1,428	626	455	303	204	4,790

20. **Defence Revenue.**—The revenue appearing under the head of "Defence" comprises the receipts derived from the sale of stores and clothing, from fines, etc., and for 1909-10 amounted to £21,847.

21. **New Revenue.**—Under this head are included receipts in connection with exemption certificates under the Immigration Restriction Act, High Court fees, industrial fees, examination fees, forfeited electoral deposits, etc. The Surplus Revenue Act passed in 1908 defines the term "New Revenue," and authorises the Treasurer to decide what items of revenue should be carried to this head. Under the "book-keeping" system this revenue was divided amongst the States *per capita*. The total revenue of this nature collected during 1909-10 was £63,076.

(c) Expenditure.

1. **Nature of Commonwealth Expenditure.**—The disbursements by the Commonwealth Government of the revenue collected by it fell naturally, under the "book-keeping" system, into three classes, viz.:—

(*a*) Expenditure on transferred services.
(*b*) Expenditure on new services.
(*c*) Payment to States of surplus revenue.

Of these three, only the two first are actual expenditure, the last being merely a transfer, the actual expenditure being incurred by the States. In accordance with the provisions of the Constitution the expenditure on transferred services was, under the "book-keeping" system, debited to the several States in respect of which such expenditure was incurred, while the expenditure on new services was distributed *per capita*. Surplus Commonwealth revenue was paid to the States monthly. During the earlier years of Federation, viz., until the end of the year 1903-4, new works, etc., for transferred departments were treated as transferred expenditure, and were charged to the States on whose behalf the expenditure had been incurred. In subsequent years all such expenditure was regarded as expenditure on new services and was distributed amongst the States *per capita*.

2. **Expenditure Debited to the Several States.** — The total expenditure by the Commonwealth Government during the period 1905-6 to 1909-10 and the amounts debited to the several States are shewn in the following table :—

COMMONWEALTH EXPENDITURE, 1905-6 to 1909-10.

State to which Debited.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.
	£	£	£	£	£
New South Wales	1,572,901	1,756,986	2,199,283	2,295,682	2,704,115
Victoria	1,198,382	1,336,589	1,686,028	1,762,726	2,079,850
Queensland	691,898	768,201	929,350	962,493	1,104,236
South Australia	425,792	468,886	564,088	590,664	682,963
Western Australia	415,143	441,533	518,997	538,193	613,118
Tasmania	193,426	215,122	264,383	270,640	315,234
Commonwealth ...	4,497,542	4,987,317	6,162,129	6,420,398	7,499,516

In all the States the expenditure for 1909-10 was higher than that for any preceding year, and was considerably higher than the expenditure for 1905-6. New South Wales, with an advance of £1,131,214, for the period, exhibited the largest numerical increase, the proportional increase amounting to 72 per cent. Victoria, whose expenditure increased by £881,468, had the highest proportional increase, viz., 73½ per cent.

3. **Expenditure per Head.**—Particulars concerning the Commonwealth expenditure per head in the several States are furnished hereunder :—

COMMONWEALTH EXPENDITURE PER HEAD, 1905-6 to 1909-10.

State.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
New South Wales ...	1 1 1	1 3 0	1 8 0	1 8 10	1 13 4
Victoria	0 19 8	1 1 8	1 7 0	1 7 9	1 11 11
Queensland	1 6 2	1 8 8	1 14 4	1 14 10	1 18 7
South Australia ...	1 2 6	1 4 5	1 8 9	1 9 0	1 12 9
Western Australia ...	1 12 7	1 13 9	1 19 8	2 0 4	2 4 10
Tasmania	1 1 4	1 3 11	1 8 9	1 9 2	1 13 9
Commonwealth ...	1 2 2	1 4 3	1 9 4	1 10 0	1 14 3

It may be noted that in all the States except South Australia the Commonwealth expenditure per head for 1909-10 is slightly more than 12s. above that for 1905-6, the excess in South Australia being 10s. 3d.

4. **Details of Expenditure.**—Details of the expenditure of the Commonwealth Government from 1905-6 onwards are given hereunder :—

COMMONWEALTH EXPENDITURE, 1905-6 to 1909-10.

Heads of Expenditure.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.
	£	£	£	£	£
Transferred expenditure (including new works, etc.)—					
Trade and Customs	262,058	263,625	286,114	297,490	276,796
Defence	949,595	1,010,013	1,306,597	1,018,028	1,148,484
Postal	2,776,940	2,948,785	3,313,565	3,567,131	3,201,554
Quarantine	...	...	...	...	21,329
Sundry departments	...	...	52	4,339	...
Refunds and Advances	25	778	15,689	484	...
"Other" expenditure (excluding new works, etc.)	508,924	764,116	1,240,112	1,532,926	2,851,353
Total	4,497,542	4,987,317	6,162,129	6,420,398	7,499,516

During the four years between 1905-6 and 1909-10 the total cost of the several departments increased from £4,497,542 to £7,499,516, an increase of £3,001,974, or about 67 per cent. The expenditure in the Department of Trade and Customs increased during the period by £14,737, or about 5½ per cent., and in the case of Defence by £198,889, or 21 per cent. Advances under other heads amounted to £424,614, or 15 per cent., in that of the Postal Department, and no less than £2,342,429, or 460 per cent., in the case of "other" expenditure, exclusive of new works, etc. It should be noted in this connection, however, that the increase of £424,614 in the postal expenditure was accompanied by an increase of £907,393 in the postal revenue, and that a very considerable portion of the increase in "other" expenditure was due to the payment of sugar bounties, which amounted to £407,779 in 1909-10, as against £154,709 in 1905-6, and to the provision of £841,181 towards the Old Age Pension scheme, payments in connection with which commenced on 1st July, 1909.

5. **New Works, etc.**—As previously mentioned, the Commonwealth expenditure on new works, etc., for transferred departments was, prior to 1904-5, included under the head of "transferred" expenditure, but in that and subsequent years has been treated as "other" expenditure and debited to the States *per capita*. For convenience of comparison with returns for previous years this expenditure has, in the foregoing table, been shewn in each case under the department for which it was incurred. Particulars of the expenditure on new works, etc., during the last five years are given in the following table:—

COMMONWEALTH EXPENDITURE ON NEW WORKS, ETC., 1905-6 to 1909-10.

Departments.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.
	£	£	£	£	£
Trade and Customs ...	1,814	1,162	8,972	20,019	5,124
Defence	171,633	195,159	440,918	101,020	337,961
Postal	146,575	275,737	427,006	541,809	555,557
Sundry departments ...	...	...	52	4,339	2,526
Total	320,022	472,058	876,948	667,187	901,168

It will be seen that the Commonwealth expenditure under this head has increased considerably in recent years, the total for 1909-10 being nearly three times as great as that for 1905-6.

6. **"Other" Expenditure.**—In accordance with sections 89 and 93 of the Constitution, all expenditure of the Commonwealth other than that incurred solely for the maintenance or continuance as at the time of transfer of any department transferred from the States to the Commonwealth, was, under the "book-keeping" system, required to be apportioned to the several States, each being debited "according to the number of its people." In consequence of this provision all expenditure in connection with transferred departments on account of central office staffs was charged as "other" or new expenditure, and not as "transferred" expenditure. The effect of this is that the ordinary statement in which division is made into "transferred" and "other" expenditure does not, for the purpose of comparison, furnish such complete information as could be desired. It has therefore been deemed expedient to rearrange the items so as to obtain a more accurate statement of the cost of the several branches of the Commonwealth service. This rearrangement is given in the succeeding paragraphs.

7. **Cost of Departments, etc.**—Arranged in such a manner as to shew under each Department the expenditure on behalf of that Department, the cost of the several branches of the Commonwealth service for the years 1905-6 to 1909-10 was as follows:—

COST OF COMMONWEALTH DEPARTMENTS, ETC., 1905-6 to 1909-10.

Departments, etc.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.
	£	£	£	£	£
Governor-General	23,759	18,612	18,927	22,554	21,908
Parliament	132,528	177,061	153,414	163,991	220,233
External Affairs	39,484	67,241	55,061	53,513	80,469
Attorney-General	20,882	27,609	32,216	32,027	32,349
Home Affairs	35,643	41,385	61,580	110,291	88,122
Treasury	17,528	17,768	20,413	34,473	74,098
Trade and Customs	442,614	634,328	914,973	837,741	754,433
Defence	970,345	1,035,795	1,334,744	1,050,590	1,534,881
Postmaster-General	2,784,664	2,966,098	3,359,290	3,625,402	3,786,755
All other Expenditure ...	30,094	1,420	211,511	489,816	906,268
Total	4,497,541	4,987,317	6,162,129	6,420,398	7,499,516

The largeness of the expenditure under the head of Parliament in the years 1906-7 and 1909-10 was in great measure due to the fact that the general elections were held in those years, while the expenditure in connection with the sugar bounties is mainly responsible for the variations which have taken place in the cost of the Department of Trade and Customs. More detailed reference to the items included under the above general heads is furnished in the succeeding paragraphs.

8. **Governor-General.**—In section 3 of the Constitution it is enacted that, until the Commonwealth Parliament otherwise provides, there shall be payable out of the Consolidated Revenue Fund for the salary of the Governor-General an annual sum of ten thousand pounds, and a proviso is made that the salary of the Governor-General shall not be altered during his continuance in office. The total expenditure in connection with the Governor-General and his establishment for the five years 1905-6 to 1909-10 is as follows:—

EXPENDITURE, GOVERNOR-GENERAL AND ESTABLISHMENT, 1905-6 to 1909-10.

Details.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.
	£	£	£	£	£
Salary	10,000	10,000	10,000	10,000	10,000
Repairs, etc., Government Houses	5,625	6,232	7,034	8,941	7,754
Contingencies	8,134	2,380	1,893	3,613	4,154
Total	23,759	18,612	18,927	22,554	21,908

The heavy charge under the head of Contingencies in 1905-6 was to some extent due to payment of arrears of travelling expenses.

9. **Parliament.**—Under this head have been grouped all the items of expenditure connected with the Parliamentary Government of the Commonwealth, including the salaries of the Ministers and the allowances to senators and members of the House of Representatives. Details for the five years 1905-6 to 1909-10 are furnished in the table given hereunder:—

EXPENDITURE, COMMONWEALTH PARLIAMENT, 1905-6 to 1909-10.

Details.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.
	£	£	£	£	£
Salaries of Ministers	12,000	11,947	12,000	12,000	12,000
Allowances to Senators	14,400	14,367	19,446	20,406	21,368
Allowances to Members of House of Representatives	30,000	27,389	41,231	43,418	37,112
Officers, staff, contingencies, etc.	29,309	27,745	32,273	30,127	31,458
Repairs, maintenance, etc.	170	846	672	2,178	2,636
Printing	16,615	12,346	19,139	13,400	15,660
Travelling expenses of Members and others	8,425	9,373	8,982	8,841	9,767
Insurance	342	342	342	342	342
Electoral Office	2,934	5,085	5,824	6,002	6,191
Election expenses	1,925	36,113	4,080	54	49,958
Referendum	...	793	...	...	...
Administration of Electoral Act	16,408	30,715	9,425	27,223	33,602
Miscellaneous	...	...	...	...	139
Total	132,528	177,061	153,414	163,991	220,233

In section 66 of the Constitution provision is made that there shall be payable out of the Consolidated Revenue Fund of the Commonwealth, for the salaries of Ministers of State, an annual sum which, until Parliament otherwise provides, shall not exceed £12,000. This provision is still in force. Allowances to senators and members of the House of Representatives are also provided for in the Constitution, section 48 of which specifies that until Parliament otherwise provides each such allowance shall consist of £400 a year, reckoned from the day on which the member takes his seat. During the second session of the Commonwealth Parliament in 1907 the question of allowances to members was under consideration, and an Act was passed raising the annual allowance from £400 to £600, such increase to date from 1st July, 1907.

10. **External Affairs.**—Under the control of the department of External Affairs is placed the expenditure in connection with the Executive Council, the London Office, and Papua. Particulars for the five years 1905-6 to 1909-10 are as follows :—

EXPENDITURE, EXTERNAL AFFAIRS DEPARTMENT, 1905-6 to 1909-10.

Details.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.
	£	£	£	£	£
Chief Office	7,500	9,248	9,172	11,329	13,882
Executive Council	836	887	870	970	781
London Office	673	1,559	2,215	3,650	4,647
Papua	20,000	23,626	25,084	22,100	28,549
Rents, repairs, &c.	437	498	469	541	820
Miscellaneous	10,038	31,423	17,251	14,923	31,790
Total	39,484	67,241	55,061	53,513	80,469

11. **Papua.**—The sums shewn in the above table as expenditure in connection with Papua represent the Commonwealth grants towards the cost of administering that territory, as well as certain additional amounts. The ordinary revenue and expenditure

of Papua are kept distinct from those of the Commonwealth. Apart from the Commonwealth contribution the principal source of revenue is the Custom House. Details for the five years 1905-6 to 1909-10 are as follows :—

PAPUAN REVENUE, 1905-6 to 1909-10.

Details.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.
	£	£	£	£	£
Customs dues	15,990	15,924	18,206	20,758	24,901
Other collections	4,246	5,889	7,813	9,948	12,017
Commonwealth grant	20,000	20,000	25,000	20,000	25,000
Total	40,236	41,813	51,019	50,706	61,918

One of the largest items of Papuan expenditure is the maintenance, etc., of vessels and boats, including the steam yacht "Merrie England," the total outlay under this head for 1909-10 being no less than £9017. The expenditure on public justice for 1909-10 totalled £13,729, comprising "magistrates, etc.," £6246 ; "armed native constabulary," £5180, and "gaols," £2303 ; on public works, £8057 ; and on the Department of Agriculture, £2129. The total expenditure for each of the five years 1905-6 to 1909-10 was as follows :—

PAPUAN EXPENDITURE, 1905-6 to 1909-10.

Particulars.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.
	£	£	£	£	£
Total expenditure	41,804	45,336	48,525	51,036	64,874

12. **Attorney-General's Department.**—The rapid growth in the expenditure connected with this Department during 1906-7 and 1907-8 was brought about in large measure by the extension of the Federal High Court, the total cost of which, including the Court of Conciliation and Arbitration, for the year 1909-10 amounted to £23,677. Details for the five years 1905-6 to 1909-10 are furnished hereunder :—

EXPENDITURE, ATTORNEY-GENERAL'S DEPARTMENT, 1905-6 to 1909-10.

Details.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.
	£	£	£	£	£
Attorney-General's Office	3,219	3,540	4,286	3,705	3,684
Crown Solicitor's Office	1,922	2,613	2,993	3,242	3,458
Salaries of Justices of High Court ...	9,500	13,815	15,500	15,500	15,500
High Court expenses	5,697	6,063	7,022	6,791	6,888
Court of Conciliation & Arbitration ...	75	505	708	1,746	1,289
Rent, repairs, etc.	469	1,073	1,707	1,043	1,530
Total	20,882	27,609	32,216	32,027	32,349

13. **Home Affairs Department.**—The creation of new departments such as the Bureau of Census and Statistics, and the Meteorological Bureau, and the extension of

the field of operations of the Public Works branch, all of which are grouped for general administrative purposes under the Department of Home Affairs, have led to a considerable increase in the expenditure. The heaviness of the expenditure of this department for 1908-9 was, in a large measure, due to the cost incurred by the Commonwealth in connection with the reception of the American fleet. Particulars for the five years 1905-6 to 1909-10 are as follows :—

EXPENDITURE, HOME AFFAIRS DEPARTMENT, 1905-6 to 1909-10.

Details.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.
	£	£	£	£	£
Chief Office	8,279	8,864	9,257	10,383	11,454
Public Service Commissioner	13,759	12,738	14,818	15,636	15,952
Public Works	9,099	9,825	10,570	15,686	17,738
Census and Statistics	...	5,007	9,781	12,394	15,137
Meteorological Bureau	...	888	9,182	16,818	16,414
Rents, repairs, etc.	2,592	3,731	5,819	5,039	5,892
Reception of United States Fleet ...	...	...	...	32,580	...
Miscellaneous	1,914	332	2,153	1,755	5,535
Total	35,643	41,385	61,580	110,291	88,122

14. **Treasurer's Department.**— The sub-departments under the control of the Commonwealth Treasurer are the Treasury, the Audit Office, the Old Age Pensions Department, and the newly-formed Land Tax Office. During the financial year 1908-9 the expenditure under this department was swelled by a donation of £10,000 to the Sicily Earthquake Relief Fund, and in 1909-10 by the increased expenditure on salaries, etc., in the Old Age Pensions Department. Details of the expenditure of this department for each of the five years 1905-6 to 1909-10 are furnished hereunder :—

EXPENDITURE, TREASURER'S DEPARTMENT, 1905-6 to 1909-10.

Details.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.
	£	£	£	£	£
Treasury	8,464	8,960	10,259	11,113	11,862
Old-age pensions—Salaries, etc. ...	...	...	...	2,297	36,393
Audit	6,698	7,003	7,804	7,996	8,593
Rents, repairs, etc.	1,349	1,285	1,751	1,884	3,400
Donation to Sicily earthquake relief funds	...	...	...	10,000	...
Miscellaneous	1,017	520	599	1,183	13,850
Total	17,528	17,768	20,413	34,473	74,098

15. **Trade and Customs.**—Under this head have been included the expenditure of all the sub-departments under the control of the Minister of Trade and Customs, as well as the amounts payable as sugar bounties and the expenses in connection therewith. The large divergencies in the total expenditure which these figures exhibit for recent years have been mainly due to variations in the amount payable in respect of sugar bounties. Particulars for the five years 1905-6 to 1909-10 are given in the following table :—

EXPENDITURE, TRADE AND CUSTOMS, 1905-6 to 1909-10.

Details.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.
	£	£	£	£	£
Chief Office	6,625	7,449	10,902	12,223	26,647
Customs (ordinary)	243,074	244,574	255,531	256,937	253,792
Patents	8,915	10,017	12,960	14,245	19,284
Trade Marks and Copyrights	1,401	3,998	4,954	3,655	
Fisheries	...	...	...	3,110	5,605
Analyst	...	...	...	2,010	1,995
Audit (proportion)	4,259	4,053	6,140	7,019	7,426
Quarantine	...	...	53	808	...
Pensions and retiring allowances ...	5,196	6,194	6,586	6,787	8,059
Rents, repairs, etc.	9,357	9,144	10,661	9,932	9,994
Sugar bounties and expenses	154,709	335,916	584,622	483,707	407,777
Bounties	...	...	176	2,633	5,885
New works, etc.	1,814	1,162	8,972	20,019	5,124
Miscellaneous	7,264	11,821	13,416	14,656	2,845
Total	442,614	634,328	914,973	837,741	754,433

16. **Cost of Collection.**—Excluding from the above the expenditure incurred in connection with Patents, Trade Marks, Copyrights, Quarantine, Fisheries, Analyst, and Sugar and other Bounties, the balance may be considered as representing approximately the cost entailed by the collection of the Customs and Excise revenue of the Commonwealth. Details for the five years 1905-6 to 1909-10 are as follows:—

COST OF CUSTOMS AND EXCISE COLLECTION, 1905-6 to 1909-10.

Particulars.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.
	£	£	£	£	£
Gross Customs and Excise revenue	8,999,485	9,648,556	11,645,352	10,844,067	11,593,164
Cost of collection	277,589	284,397	312,207	329,583	313,887
Net revenue	8,721,896	9,364,159	11,333,145	10,514,484	11,279,277
Percentage of cost of collection on gross revenue	3.08%	2.95%	2.68%	3.04%	2.71%

It will be seen that throughout the period the cost of collecting the Customs and Excise revenue has been rather less than 3 per cent. of the revenue collected, varying only between 2.68 per cent. in 1907-8 and 3.08 per cent. in 1905-6.

17. **Defence.**—The Commonwealth expenditure in connection with Defence, which in 1901-2 amounted to £861,218, had by 1907-8 grown to £1,334,744, but there was a decrease in 1908-9 of nearly £300,000 on the previous year which was more than counterbalanced by a large rise in 1909-10. The largeness of the expenditure for 1907-8 was due mainly to the provision made in that year for new works. Particulars for the five years 1905-6 to 1909-10 are as follows:—

EXPENDITURE, DEFENCE, 1905-6 to 1909-10.

Details.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.
	£	£	£	£	£
Chief Office	18,832	19,246	21,913	23,884	45,046
Military	500,377	535,178	577,627	625,600	835,181
Naval	245,778	250,200	254,069	259,251	263,143
Audit (proportion)	754	802	810	960	...
Pensions and retiring allowances	907	974	974	1,017	781
Rents, repairs, etc.	29,732	27,386	32,023	29,798	29,621
New works, etc.	171,633	195,159	440,918	101,020	339,549
Miscellaneous	2,332	6,850	6,410	9,060	21,560
Total	970,345	1,035,795	1,334,744	1,050,590	1,534,881

18. **Postal.**—From a total of £2,784,664 in 1905-6 the cost of the department under the control of the Postmaster-General advanced to £3,786,755 in 1909-10, an increase of £1,002,091. Of this increase the ordinary cost of working the department was responsible for £549,147, while the expenditure on new works, etc., advanced by £408,982. Details for the five years 1905-6 to 1909-10 are furnished hereunder:—

EXPENDITURE, POSTAL DEPARTMENT, 1905-6 to 1909-10.

Details.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.
	£	£	£	£	£
Chief Office	6,484	8,125	9,664	10,780	13,419
Postal Dept. (ordinary)	2,574,210	2,618,767	2,848,196	2,986,992	3,123,357
Audit (proportion)	1,755	2,194	1,981	2,393	2,398
Pensions and retiring allowances ...	12,768	16,573	19,419	26,186	32,083
Rents, repairs, etc.	40,550	43,235	49,257	51,454	54,484
New works, etc.	146,575	275,737	427,006	541,809	555,557
Miscellaneous	2,322	1,467	3,767	5,788	5,457
Total	2,784,664	2,966,098	3,359,290	3,625,402	3,786,755

19. **Miscellaneous.**—In addition to the foregoing there are certain items which do not come under any of the heads enumerated. For 1909-10 the total expenditure under this heading was £906,268, the principal items being £2319 for machinery and plant for the printing office; £2881 towards survey of transcontinental railway route; a provision of £841,181 towards the payment of old-age pensions; and £32,579 on account of the Manufactures Encouragement Act.

(D) Surplus Revenue Paid to States.

1. **Net Revenue.**—As mentioned in sub-section 1 of this section, the Constitution provided under sections 87, 93 and 95 for the payment to the States of all surplus revenue of the Commonwealth, such payment to amount in the aggregate during the continuation of the Braddon clause to not less than three-fourths of the net revenue from Customs and Excise. The expression "net revenue" used in section 87 has been taken to mean the gross revenue less drawbacks and refunds, and in addition cost of collection. This view,

adopted by the Commonwealth Government, is that indicated by Quick and Garran in their "Annotated Constitution of the Australian Commonwealth," in which they say: "The net revenue from duties of Customs and Excise is the total receipts from these sources after deducting the cost of collection. No attempt is made in the Constitution to define the deductions which may be made in order to arrive at the net revenue; this is a matter of book-keeping, which is left wholly to the Executive Government." In actual practice the statutory three-fourths of net Customs and Excise revenue is ascertained by the Commonwealth Treasury by deducting from the total Customs and Excise revenue (less drawbacks and refunds) the "transferred" expenditure of the Department of Trade and Customs and the expenditure on new works for that department, and taking three-fourths of the result.

2. **Actual Payments of Surplus.**—In the following table a comparison is made between the amounts actually paid to the several States since the inauguration of Federation, and the minimum which, in accordance with the preceding paragraph, the Commonwealth was constitutionally bound to pay. It should be noted that the payments here shewn for any year are those made on account of that year although actually paid after its close.

PAYMENTS OF SURPLUS REVENUE, 1901 to 1909-10.

Year.	Payment on Account of Period.	Three-fourths of Net Customs and Excise Revenue.	Amount Paid to States out of the one-fourth retainable by Commonwealth.
	£	£	£
Half-year to 30th June, 1901 ...	3,599,702	3,021,857	577,845
1901-2	7,364,239	6,475,495	888,744
1902-3	8,204,566	7,059,329	1,145,237
1903-4	7,378,479	6,633,147	745,332
1904-5	7,142,769	6,407,483	735,286
1905-6	7,384,383	6,554,473	829,910
1906-7	7,845,574	7,039,573	806,001
1907-8	8,856,905	8,526,165	330,740
1908-9	7,930,395	7,930,395	...
1909-10	8,492,436	8,492,436	...
Total	74,199,448	68,140,353	6,059,095

It will be seen from the foregoing table that during the nine and a-half years which elapsed since the foundation of the Commonwealth the surplus revenue returned to the States exceeded the statutory minimum by no less a sum than £6,059,095; in other words, the Commonwealth, during the period, returned to the States surplus revenue to the extent of about 81½ per cent. of the net revenue from Customs and Excise instead of the 75 per cent. minimum required under the Constitution.

3. **Payments to the Several States.**—In the following table are furnished particulars relative to the amounts actually paid to the several States on account of each of the financial years 1905-6 to 1909-10:—

SURPLUS COMMONWEALTH REVENUE PAID TO STATES, 1905-6 to 1909-10.

State.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.
	£	£	£	£	£
New South Wales ...	2,741,929	3,025,137	3,617,472	3,326,276	3,480,314
Victoria	2,094,503	2,201,013	2,377,708	1,987,435	2,109,379
Queensland	858,462	938,935	1,038,267	1,027,047	1,099,383
South Australia ...	562,000	644,564	791,664	716,957	842,508
Western Australia ...	871,960	774,882	751,735	627,933	707,672
Tasmania	255,529	261,043	280,059	244,747	253,180
Total	7,384,383	7,845,574	8,856,905	7,930,395	8,492,436

Taking the States as a whole the surplus Commonwealth revenue paid on account of the year 1907-8 was higher than that paid on account of any other financial year. As regards the individual States the maximum payment took place in New South Wales and Victoria in 1907-8, in Queensland and South Australia in 1909-10, in Western Australia in 1902-3, and in Tasmania in 1901-2. The largeness of the amount returned by the Commonwealth to the States in respect of 1907-8 was in great measure due to the increased Customs and Excise revenue collected under the new tariff of that year. For 1908-9 the surplus revenue paid to the States was lower in all cases than that for 1907-8. This was due in part to the fact that the 1907-8 payments were somewhat abnormal, and in part to the retention by the Commonwealth in 1908-9 of all revenue in excess of the statutory three-fourths of net Customs and Excise Revenue. In 1909-10 the surplus revenue returned to the States was higher in every case than in 1908-9.

4. **Surplus Commonwealth Revenue per head of Population.**—The following table furnishes particulars concerning the amount of surplus Commonwealth revenue per head of population which the several States received during the financial years 1905-6 to 1909-10, and is of interest in connection with the new financial agreement, under which the Commonwealth is to pay 25s. per head of population, to all the States, for a period of ten years subject to a special arrangement in favour of Western Australia. (See pp. 800 and 801.)

SURPLUS COMMONWEALTH REVENUE PER HEAD OF POPULATION PAID TO STATES, 1905-6 to 1909-10.

State.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
New South Wales ...	1 16 9	1 19 8	2 6 1	2 1 10	2 2 10
Victoria	1 14 5	1 15 9	1 18 1	1 11 3	1 12 4
Queensland	1 12 6	1 15 1	1 18 4	1 17 2	1 18 5
South Australia ...	1 9 9	1 13 7	2 0 4	1 15 3	2 0 6
Western Australia ...	3 8 5	2 19 2	2 17 6	2 7 0	2 11 9
Tasmania	1 8 3	1 9 0	1 10 5	1 6 4	1 7 1
Total	1 16 5	1 18 1	2 2 3	1 17 1	1 18 10

5. **The Commonwealth Fourth of Net Customs and Excise Revenue.**—As noted in paragraph number two above, the Commonwealth has in each financial year except 1908-9 and 1909-10 paid to the States a considerable portion of the one-fourth of net Customs and Excise revenue which it was entitled under the Constitution to spend for its own purposes. The manner in which this extra payment was distributed amongst the several States from 1905-6 to 1909-10 is exhibited in the following table:—

PAYMENT TO STATES FROM COMMONWEALTH FOURTH OF NET CUSTOMS AND EXCISE REVENUE, 1905-6 to 1909-10.

State.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.
	£	£	£	£	£
New South Wales ...	371,023	400,937	292,121	186,754	168,360
Victoria	241,594	209,543	19,058	— 109,019*	—127,663*
Queensland	8,639	18,812	— 44,114*	— 60,128*	— 52,083*
South Australia ...	65,970	81,890	55,733	23,027	51,092
Western Australia ...	124,922	84,521	27,573	— 12,414*	— 6,992*
Tasmania	17,762	10,298	— 19,631*	— 28,220*	— 32,714*
Total	829,910	806,001	330,740	...	...

*Amount retained by Commonwealth in addition to one-fourth of the State's net revenue from Customs and Excise.

Although the States as a whole received in each year not less than three-fourths of the net revenue from Customs and Excise, there were six occasions, viz., in 1901-2, 1903-4, 1904-5, 1907-8, 1908-9, and 1909-10, on which the amount returned to Queensland fell short of three-fourths of that State's net revenue from Customs and Excise; three, viz., in 1907-8, 1908-9, and 1909-10, on which the amount returned to Tasmania exhibited a shortage; and two, viz., in 1908-9 and 1909-10, in which Victoria and Western Australia also received less than three-fourths of their respective net revenues from Customs and Excise. For the whole period of nine and a-half years, however, each State except Queensland received more than three-fourths of its net revenue from Customs and Excise, the largest aggregate excess being £3,009,398 in the case of New South Wales. In the case of Queensland the aggregate amount received for the period fell short of three-fourths of the net Customs and Excise revenue by £94,726.

6. **Proportion Actually Paid.**—For the period of nine and a-half years from the 1st January, 1901, to 30th June, 1910, the percentage of net revenue from Customs and Excise duties paid to the several States was as follows:—New South Wales, 84 per cent.; Victoria, 80 per cent.; Queensland, 74 per cent.; South Australia, 84 per cent.; Western Australia, 86 per cent.; Tasmania, 78 per cent.

(E) Interstate Customs and Excise Adjustments.

1. **Reason for Adjustments.**—In order that the duties of Customs and Excise should, during the continuance of the "book-keeping system" of Commonwealth and State finance, be credited to that State in which the goods subject to such duties have been consumed, provision was made in section 93 of the Constitution that "during the first five years after the imposition of uniform duties of Customs, and thereafter until the Parliament otherwise provides, the duties of Customs chargeable on goods imported into a State and afterwards passing into another State for consumption, and the duties of Excise paid on goods produced or manufactured in a State and afterwards passing into another State for consumption, shall be taken to have been collected not in the former but in the latter State." In the ordinary course duties collected in any State were credited to that State, and compliance with the above provisions necessitated the debiting of the State with the duty collected when the goods paying such duty passed for consumption into another State, the latter being credited with the amount. Returns shewing such credits and debits thus furnished an indication of the relative positions of the several States as distributors of dutiable goods. States in which the adjustment resulted in a net debit might be looked upon as distributing States, while those in which the result was a net credit were consuming States.

2. **Interstate Adjustments for 1909-10.**—Particulars for each of the States for the year ended 30th June, 1910, are furnished hereunder:—

INTERSTATE ADJUSTMENTS, 1909-10.

State.	Customs.		Excise.		Total Customs and Excise.		
	Credits.	Debits.	Credits.	Debits.	Credits.	Debits.	Net Results.
	£	£	£	£	£	£	£
New South Wales	325,489	472,523	72,136	168,057	397,625	640,580	Dr. 242,955
Victoria	179,078	618,183	51,003	176,644	230,081	794,827	Dr. 564,746
Queensland ...	288,869	34,446	118,510	16,409	407,379	50,855	Cr. 356,524
South Australia ...	186,072	111,638	56,228	20,054	242,300	131,692	Cr. 110,608
Western Australia	142,398	9,539	65,792	253	208,190	9,792	Cr. 198,398
Tasmania ...	137,348	12,925	29,094	11,346	166,442	24,271	Cr. 142,171
Total ...	1,259,254	1,259,254	392,763	392,763	1,652,017	1,652,017	...

3. **Net Results, 1905-6 to 1909-10.**—The net results of the interstate Customs and Excise adjustments for each of the five years 1905-6 to 1909-10 are given in the following table:—

It will be seen that Victoria and New South Wales were the principal distributing States, Victoria occupying the leading position, while Queensland, Western Australia, and Tasmania were the principal consuming States. South Australia occupied what might be considered as a middle position, being both a distributor and a consumer on a large scale, though considerably more of the latter than the former. The growth of Victoria as a distributing centre for the Commonwealth was both continuous and rapid.

INTERSTATE ADJUSTMENTS, 1905-6 to 1909-10.

State.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.
	£	£	£	£	£
New South Wales	Dr. 133,396	Dr. 150,215	Dr. 167,027	Dr. 225,790	Dr. 242,955
Victoria	Dr. 366,412	Dr. 424,828	Dr. 521,194	Dr. 532,159	Dr. 564,746
Queensland	Cr. 214,358	Cr. 247,719	Cr. 283,061	Cr. 335,596	Cr. 356,524
South Australia	Cr. 36,940	Cr. 37,724	Cr. 67,668	Cr. 97,789	Cr. 110,608
Western Australia	Cr. 135,918	Cr. 161,923	Cr. 185,284	Cr. 178,402	Cr. 198,398
Tasmania	Cr. 112,592	Cr. 127,677	Cr. 152,208	Cr. 146,162	Cr. 142,171

§ 3. Trust Fund.

1. **Trust Accounts.**—The Trust Fund credit balance on 30th June, 1910, amounted to £903,904, as compared with £1,072,654 for the corresponding date in the preceding year. Details concerning the various trust accounts contributing to this amount are as follows :—

COMMONWEALTH TRUST FUND, 30th JUNE, 1910.

Trust Accounts.	Balance at 30th June, 1910.	Trust Accounts.	Balance at 30th June, 1910.
	£		£
Harbour & Coastal Defence (naval)	1,186	Defalcations...	56
C'wealth Ammunition Material ...	39	Guarantee Fund	6,525
Small Arms Ammunition ...	19,006	Other Trust Moneys—	
Defence Clothing Material ...	5,753	Home Affairs	818
Small Arms	12,146	Customs	20,558
Unclaimed Militia Pay—military	1,525	Patents	27
,, ,, naval	349	Defence	2,190
Customs Officers' Overtime ...	648	Post Office...	42,168
Money Order	40,000	Treasury	17
Internat'n'l Postal & Money Order	8,688	External Affairs	1,500
Pacific Cable Board	43	Naval Agreement Act ...	1
Government Printer	15,154	Repatriation of Pacific Islanders	15
Pensions, Departmental ...	24,905	London Liabilities	635,611
Invalid and Old Age Pensions ...	63,900		
Papua	433		
Officers' Assurance	643	Total	903,904

2. **Distribution.**—The amounts to credit of Trust Fund in the several States on 30th June, 1910, were as follows :—New South Wales, £104,830; Victoria, £730,181; Queensland, £25,659; South Australia, £16,067; Western Australia, £14,851; and Tasmania, £12,316.

SECTION XX.

STATE FINANCE.

§ 1. General.

1. **Functions of State Governments.**—In any comparison of the finances of the several States due recognition must be made of the actual functions assumed by the respective Governments, and also of the local conditions and requirements in each case. Direct comparisons of public expenditure are thus rendered difficult, owing to the fact that functions which in one State are assumed by the Central Government are in another State relegated to local governing bodies, and further by the fact that costly developmental work may, under certain conditions, be not only economically justifiable, but may be an essential of progress, whilst parsimonious expenditure may be a serious economic blunder. A large expenditure may, therefore, be an indication either of gross extravagance and bad economy on the one hand or healthy and vigorous progress and good economy on the other, and an accurate appreciation of the relative positions of the several States requires a careful survey of their respective local circumstances and conditions.

Similarly as regards revenue, imposts which in some States are levied by the Central Government are in others considered as matters to be dealt with locally. Under these circumstances care is needed in instituting comparisons between the several States, and the particulars contained in this section should be read in connection with those contained in the section dealing with Local Government. It should also be noted that in many ways the budgets of the Australian Governments differ materially from those of most European countries, owing to the inclusion therein of the revenue and expenditure of departments concerned in rendering public services, such for instance as railways, tramways, water supply, etc., which, in the other countries referred to, are often left to private enterprise.

2. **Accounts of State Governments.**—The various financial transactions of the States are in each case concerned with one or other of three Funds—the "Consolidated Revenue Fund," the "Trust Funds," and the "Loan Funds." All revenue collected by the State is placed to the credit of its Consolidated Revenue Fund, from which payments are made under the authority of an Annual Appropriation Act passed by the Legislature, or by a permanent appropriation under a special Act. The hypothecation of the revenue from a specific tax to the payment for some special service is not practised in Australia, all statutory appropriations ranking on an equality as charges on the Consolidated Revenue Fund. The Trust Funds comprise all moneys held in trust by the Government, and include such items as savings bank funds, sinking funds, insurance companies' deposits, etc. The Loan Funds are credited with all loan moneys raised by the State, and debited with the expenditure therefrom for public works or other purposes.

3. **Inter-relation of Commonwealth and State Finance.**—The principal alteration in State finance, brought about by Federation, has been that the States have transferred to the Commonwealth the large revenue received by the Customs and Postal Departments,

and have been relieved of the expenditure connected with these and the Defence Departments, while, on the other hand, a new item of State revenue has been introduced, viz., the payment to the States of the surplus revenue of the Commonwealth. Provision for the taking over by the Commonwealth of certain of the public debts of the States is made in section 105 of the Constitution, and a proposed law extending this provision to the whole of the State indebtedness, which passed both Houses of the Federal Legislature by the statutory majority, was submitted to a referendum at the election in April, 1910, and received the requisite endorsement by the electorate.

§ 2. State Consolidated Revenue Funds.

(A) Receipts.

1. **Sources of Revenue.**—The principal sources of State revenue are:—
   (*a*) Taxation.
   (*b*) The public works and services controlled by the State Governments.
   (*c*) Sale of and rental from Crown lands.
   (*d*) The surplus Commonwealth revenue returned to the States.
   (*e*) Miscellaneous sources, comprising fines, fees, interest, etc.

Of these sources that yielding the largest revenue for the States as a whole is the group of public works and services, the principal contributor being the Government railways and tramways. Next in magnitude comes the payment of surplus revenue by the Commonwealth, followed in order by Taxation and Land Revenue.

2. **Amount Collected.**—The following table furnishes particulars of the total amount of consolidated revenue received by the several States during the nine years 1901-2 to 1909-10:—

STATE REVENUES, 1901-2 to 1909-10.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Total.
	£	£	£	£	£	£	£
1901-2 ...	11,007,356	6,997,792	3,535,062	2,477,431	3,354,123	826,163	28,197,927
1902-3 ...	11,296,069	6,954,619	3,526,465	2,530,568	3,630,238	734,663	28,672,622
1903-4 ...	11,248,328	7,319,949	3,595,440	2,568,100	3,550,016	857,668	29,139,501
1904-5 ...	11,336,918	7,515,742	3,595,399	2,798,849	3,615,340	852,681	29,714,929
1905-6 ...	12,283,082	7,811,475	3,853,523	2,866,308	3,558,939	900,657	31,273,984
1906-7 ...	13,392,435	8,345,534	4,307,912	3,252,705	3,401,354	970,843	33,670,783
1907-8 ...	13,960,763	8,314,480	4,488,398	3,722,090	3,376,641	1,005,274	34,867,646
1908-9 ...	13,646,126	8,247,684	4,769,172	3,591,260	3,268,993	934,405	34,457,640
1909-10	14,540,073	8,597,992	5,119,254	4,032,891	3,657,670	1,008,932	36,956,812

The figures given in this table relate in each instance to the financial year ended 30th June, except in the case of Tasmania, where the figures shewn for 1901-2, 1902-3, and 1903-4 relate respectively to the years ended 31st December, 1901, 1902, and 1903.

During the eight years from 1901-2 to 1909-10 the aggregate revenues of the States increased by no less a sum than £8,758,885, or a little over 31 per cent. Increases were in evidence in all the States, the largest increase being that of £3,532,717 in New South Wales.

It will be noticed that in all of the States, except Queensland, the revenue for 1908-9 was lower than that of the preceding year, largely owing to the fact that the revenue for 1907-8 was swelled by the payment of Customs duties in anticipation of, or in consequence of, the new tariff imposed on 8th August, 1907. In all the States the revenue for 1909-10 was the maximum for the nine years under review.

3. **Revenue per Head.**—Details concerning the revenue per head of population, collected in the several States of the Commonwealth during the nine years 1901-2 to

1909-10, are furnished in the table given hereunder. It will be seen that throughout the period Western Australia has collected by far the largest amount per head, and that Tasmania has collected the least.

STATE REVENUE PER HEAD OF POPULATION, 1901-2 to 1909-10.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1901-2 ...	8 0 1	5 15 7	6 19 9	6 15 6	17 5 7	4 16 3	7 7 5
1902-3 ...	8 1 0	5 14 10	6 18 1	6 18 0	17 0 4	4 5 0	7 8 6
1903-4 ...	7 17 7	6 1 1	6 19 6	6 19 3	15 12 10	4 16 11	7 8 5
1904-5 ...	7 15 7	6 4 2	6 17 10	7 10 2	14 18 5	4 14 8	7 9 2
1905-6 ...	8 4 8	6 8 2	7 5 11	7 11 4	13 19 4	4 19 6	7 14 4
1906-7 ...	8 15 5	6 15 6	8 1 0	8 9 6	12 19 11	5 7 9	8 3 6
1907-8 ...	8 18 0	6 13 3	8 5 8	9 9 7	12 18 2	5 9 3	8 6 2
1908-9 ...	8 11 6	6 9 9	8 12 8	8 16 5	12 4 9	5 0 7	8 1 2
1909-10 ...	8 19 4	6 11 11	8 18 9	9 13 10	13 7 5	5 8 0	8 9 0

In all the States, except Western Australia, the last four years have witnessed a marked increase in the State revenue collections per head, the most noticeable advances being £2 2s. 6d. in the case of South Australia and £1 12s. 10d. in that of Queensland. The Western Australian decline was continuous until 1908-9, though recovering in 1909-10, and for 1909-10 the revenue per head in that State exceeded the Commonwealth average by more than 50 per cent. Four States, viz., Western Australia, South Australia, Queensland, and New South Wales, exceeded the Commonwealth average for 1909-10, while the other two States fell short of it.

4. **Details for 1909-10.**—Classifying the revenue of the several States in the manner indicated in § 2 (A) 1 above, particulars for the year 1909-10 are as follows:—

DETAILS OF STATE REVENUE, 1909-10.

Particulars.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	All States.
	£	£	£	£	£	£	£
Taxation	1,223,521	1,088,353	584,997	481,003	336,396	303,390	4,017,660
Public Works & Services	7,909,961	4,687,849	2,409,507	2,226,022	2,076,739	335,828	19,645,906
Land	1,729,740	352,076	756,400	377,331	317,560	100,284	3,633,391
Surplus C'wlth Revenue	3,347,616	1,922,278	1,071,261	803,057	703,723	239,816	8,087,751
Miscellaneous	329,235	547,436	297,089	145,478	223,252	29,614	1,572,104
Total	14,540,073	8,597,992	5,119,254	4,032,891	3,657,670	1,008,932	36,956,812

It will be noted that the amounts returned under the heading "Surplus Commonwealth Revenue" do not quite agree with those given in the chapter on Commonwealth Finance, page 821. This arises from the fact that the State figures shew the amount for which credit was taken by the State during the financial year 1909-10, whilst the Commonwealth figures shew the amounts paid to State Treasurers on account of that financial year.

5. **Revenue per Head, 1909-10.**—Particulars concerning the revenue per head of population in each State derived from the several sources enumerated in the preceding paragraph are given hereunder:—

STATE REVENUE PER HEAD, 1909-10.

Particulars.	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tas.	All States.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Taxation	0 15 1	0 16 8	1 0 5	1 3 1	1 4 7	1 12 6	0 18 4
Public Works & Services	4 17 7	3 12 0	4 4 2	5 7 0	7 11 10	1 15 11	4 9 10
Land	1 1 4	0 5 4	1 6 5	0 18 2	1 3 3	0 10 9	0 16 7
Surplus C'wlth. Revenue	2 1 3	1 9 6	1 17 5	1 18 7	2 11 5	1 5 8	1 17 0
Miscellaneous	0 4 1	0 8 5	0 10 4	0 7 0	0 16 4	0 3 2	0 7 3
Total	8 19 4	6 11 11	8 18 9	9 13 10	13 7 5	5 8 0	8 9 0

The largeness of the revenue per head from public works and services in the case of Western Australia is mainly due to the fact that the number of miles of railway in that State is large compared with the population, and that the revenue-earning power of the railways is also high.

6. **Relative Importance of Sources of Revenue.**—The following table furnishes an indication of the relative importance of the different sources of revenue in the several States, the figures given being the percentage which each item of revenue bore to the total for the State for the year 1909-10:—

PERCENTAGE ON TOTAL STATE REVENUE, 1909-10.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	%	%	%	%	%	%	%
Taxation	8.41	12.66	11.42	11.93	9.20	30.07	10.87
Public Works and Services ...	54.40	54.52	47.07	55.20	56.78	33.29	53.16
Land	11.90	4.09	14.78	9.36	8.68	9.94	9.83
Surplus C'wealth Revenue ...	23.02	22.36	20.93	19.91	19.24	23.77	21.89
Miscellaneous	2.27	6.37	5.80	3.60	6.10	2.93	4.25
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00

One of the most noticeable features of the figures here given is the comparatively low percentage for "public works and services" and the high percentage for "taxation" in the case of Tasmania. In New South Wales and Queensland land revenue is an important item, while in Queensland the revenue from "public works and services" falls considerably below the Commonwealth average.

7. **State Taxation.**—(*a*) *Details, 1909-10.* Prior to the inauguration of Federation the principal source of revenue from taxation was the imposition of duties of Customs and Excise. At the present time the most productive forms of State taxation are the income tax, which is now imposed in all the States (Western Australia, the last of the States to adopt this method of taxation, having passed the necessary legislation during the Parliamentary session of 1907), and probate and succession duties. For 1909-10 stamp duties occupied third place. In addition to these a land tax is now collected in all the States except Queensland, and license fees of various kinds are collected in all the States, while a dividend tax is collected in Western Australia, and an "ability" tax[1] in Tasmania. The total revenue from taxation collected by the States during the year 1909-10 was £4,017,660, details of which are set forth in the table given hereunder:—

STATE REVENUE FROM TAXATION, 1909-10.

Taxation.	N.S.W.	Victoria.	Q'land.	S. Aust.	W.A.	Tas.	All States.
	£	£	£	£	£	£	£
Probate and succession duties	650,202	358,173	61,133	84,651	57,416	44,267	1,255,902
Other stamp duties	222,720	250,358	145,556	97,877	62,714	54,741	833,966
Land tax	9,066	114,357	...	94,126	34,344	79,021	330,914
Income tax	219,977	338,585	304,693	180,923	43,865	68,330	1,156,373
Dividend tax	...	...	...	...	88,315	...	88,315
Ability tax	...	...	...	...	...	41,928	41,928
Licenses	121,556	20,927	60,753	23,426	42,589	13,442	282,693
Other taxation	...	5,953	12,802	...	7,153	1,661	27,569
Total	1,223,521	1,088,353	584,997	481,003	336,396	303,390	4,017,660

The most productive forms of taxation in the several States during the year 1909-10 were as follows:—New South Wales and Victoria, probate and succession duties; Queens-

1. The "ability" tax is based upon the annual value of the house occupied by the taxpayer, or upon the amount payable by him for board and lodging.

land and South Australia, income tax; Western Australia, dividend tax; and Tasmania, land tax.

(*b*) *Summary, 1901-2 to 1909-10.* The total amount raised by means of taxation by the several State Governments during the nine years 1901-2 to 1909-10 is given in the following table:—

STATE REVENUE FROM TAXATION, 1901-2 to 1909-10.

Year.	New South Wales.	Victoria.	Queensland.	S. Australia.	W. Aust.	Tasmania.	All States.
	£	£	£	£	£	£	£
1901-2	1,108,770	748,216	276,771	267,791	173,582	111,515	2,686,645
1902-3	1,108,781	878,591	415,688	398,941	221,247	105,402	3,128,650
1903-4	1,100,193	938,147	475,184	353,432	235,114	150,091	3,252,161
1904-5	1,114,408	897,870	454,574	442,030	221,738	216,953	3,347,573
1905-6	1,297,776	990,735	494,165	369,756	260,609	248,799	3,661,840
1906-7	1,381,305	1,110,411	540,737	411,867	266,152	276,450	3,986,922
1907-8	1,077,534	977,620	525,540	477,637	277,463	265,656	3,601,450
1908-9	907,249	1,072,228	535,194	450,250	296,599	250,835	3,512,355
1909-10	1,223,521	1,088,353	584,997	481,003	336,396	303,390	4,017,660

During the eight years between 1901-2 and 1909-10 the aggregate State revenue from taxation increased by nearly 50 per cent., the increase varying considerably in the several States. Thus while New South Wales shewed an increase of only 10 per cent., and Victoria of only 45 per cent., the Queensland revenue advanced by 111 per cent., and that of Tasmania by no less than 172 per cent. The total increase in State taxation for the year amounted to £505,305.

The revenue from State taxation per head of population, collected in the several States during each of the years 1901-2 to 1909-10, was as follows:—

STATE TAXATION PER HEAD, 1901-2 to 1909-10.

Year.	New South Wales.	Victoria.	Queensland.	S. Australia.	W. Aust.	Tasmania.	All States.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1901-2	0 16 1	0 12 4	0 10 11	0 14 8	0 17 11	0 13 0	0 14 1
1902-3	0 15 10	0 14 6	0 16 3	1 1 9	1 0 9	0 12 2	0 16 1
1903-4	0 15 5	0 15 6	0 18 5	0 19 2	1 0 9	0 17 0	0 16 7
1904-5	0 15 4	0 14 10	0 17 5	1 3 9	0 18 4	1 4 1	0 16 10
1905-6	0 17 5	0 16 3	0 18 9	0 19 7	1 0 5	1 7 6	0 18 1
1906-7	0 18 1	0 18 0	1 0 2	1 1 6	1 0 4	1 10 9	0 19 4
1907-8	0 13 9	0 15 8	0 19 5	1 4 4	1 1 3	1 8 10	0 17 2
1908-9	0 11 5	0 16 11	0 19 4	1 2 1	1 2 2	1 7 0	0 16 5
1909-10	0 15 1	0 16 8	1 0 5	1 3 1	1 4 7	1 12 6	0 18 4

Taking the States as a whole the State taxation increased by four shillings and threepence per head during the eight years from 1901-2 to 1909-10, the most marked increase being that of nineteen shillings and sixpence per head in the case of Tasmania. In Queensland the increase amounted to nine shillings and sixpence, in South Australia to eight shillings and fivepence, in Western Australia to six shillings and eightpence, in Victoria to four shillings and fourpence, while in New South Wales a decline of one shilling took place, owing in large measure to the reductions made in that State in the imposition of income tax and stamp duties and the loss of revenue consequent on the transfer of land tax receipts to local bodies. State taxation per head is at present highest in Tasmania and lowest in New South Wales.

8. **Commonwealth and State Taxation.**—For the purpose of obtaining an accurate view of the extent of taxation imposed on the people of the Commonwealth by the central

governing authorities it is necessary to add together the Commonwealth and State collections. This has been done in the table given hereunder, which contains particulars concerning the total taxation for each of the years 1905-6 to 1909-10, as well as the amount per head of population:—

COMMONWEALTH AND STATE TAXATION, 1905-6 to 1909-10.

Particulars.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.
	£	£	£	£	£
C'wealth taxation	8,999,485	9,648,556	11,645,352	10,844,067	11,593,164
State taxation	3,661,840	3,986,922	3,601,450	3,512,355	4,017,660
Total	12,661,325	13,635,478	15,246,802	14,356,422	15,610,824
Taxation per head	£3 2 6	£3 6 2	£3 12 8	£3 7 2	£3 11 2

Whilst the Commonwealth taxation increased during the period by £2,593,679, the State taxation advanced by £355,820, the aggregate increase being £2,949,499. The amount has, however, fluctuated somewhat during the period, and has ranged between a minimum of £3 2s. 6d. per head in 1905-6 and a maximum of £3 12s. 8d. per head in 1907-8.

9. **Public Works and Services.**—A very large proportion of the revenue of all the States of the Commonwealth is made up of the receipts from the various public works and services under the control of the several Governments. The principal of these are railways and tramways, harbour works, and water supply and sewerage, while in addition, State batteries for the treatment of auriferous ores exist in Western Australia, and various minor revenue-producing services are rendered by the Governments of all the States. For the year 1909-10 the aggregate revenue from this source totalled £19,645,906, or more than 50 per cent. of the revenue from all sources. Details of revenue from public works and services for the year 1909-10 are as follows:—

STATE REVENUE FROM PUBLIC WORKS AND SERVICES, 1909-10.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Railways and Tramways ...	6,664,236	4,450,782	2,318,623	1,831,993	1,649,397	282,365	17,197,396
Harbour Services	428,267	97,381	25,338	84,436	103,790	...	739,212
Public Batteries	...	377	...	...	80,738	...	81,115
Water Supply and Sewerage	594,890	*116,216	...	*146,762	*135,611	...	993,479
Other Public Services ...	222,568	23,093	65,546	162,831	107,203	53,463	634,704
Total	7,909,961	4,687,849	2,409,507	2,226,022	2,076,739	335,828	19,645,906

* Water Supply only.

10. **Land Revenue.**—The revenue derived by the States from the sale and rental of Crown lands has, with few exceptions, been treated from the earliest times as forming part of their respective Consolidated Revenue Funds, and has been applied to meet ordinary current expenses. Where the rentals received are for lands held for pastoral or for residential purposes, such application of the revenue appears perfectly justifiable. On the other hand, where the rentals are those of mineral and timber lands, and in all cases of sales of lands, such a proceeding is essentially a disposal of capital in order to defray current expenses. As a matter of financial procedure such a course is open to a very obvious criticism. In the following table particulars of revenue derived from sales and rental of Crown lands are given for the year 1909-10:—

STATE LAND REVENUE, 1909-10.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£	£	£	£	£	£	£
Sales ...	944,164	216,902	222,566	224,884	194,875	61,575	1,864,966
Rentals ...	785,576	135,174	533,834	152,447	122,685	38,709	1,768,425
Total ...	1,729,740	352,076	756,400	377,331	317,560	100,284	3,633,391

11. **Surplus Commonwealth Revenue.**—The payments to the States of surplus Commonwealth revenue represent in each instance a considerable proportion of the State's revenue, and for the year 1909-10 aggregated £8,087,751. The percentage which the surplus revenue received by each State for 1909-10 was of the total collected by the Commonwealth in respect of that State is shewn in the following table:—

SURPLUS COMMONWEALTH REVENUE PAID TO STATES DURING 1909-10.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Surplus Commonwealth revenue received by each State	3,347,616	1,922,278	1,071,261	803,057	703,723	239,816	8,087,751
Total Commonwealth revenue in respect of each State	6,017,118	4,054,761	2,144,538	1,482,547	1,292,568	549,137	15,540,669
Percentage of surplus on total Commonwealth revenue in respect of State	% 55.63	% 47.41	% 49.95	% 54.17	% 54.44	% 43.67	% 52.04

The surplus revenue here shewn is that for which the several States took credit during the year 1909-10. (See also page 827.)

It will be seen from the foregoing table that the surplus Commonwealth revenue which the States received for 1909-10 represented 52 per cent. of the total Commonwealth collections for that year, the balance, 48 per cent., being absorbed in defraying the expenses of the various transferred and new departments under the control of the Commonwealth Government. The largest percentage returned was 56 per cent., in the case of New South Wales, and the smallest 44 per cent., in the case of Tasmania.

12. **Miscellaneous Items of Revenue.**—In addition to the foregoing sources of revenue there are in each State several miscellaneous ones, including such items as interest, fines, fees, etc., which for the year 1909-10 aggregated £1,572,104.

(B) Disbursements.

1. **Heads of Expenditure.**—The principal heads of State expenditure from Consolidated Revenue Funds are:—

(*a*) Interest and sinking funds in connection with public debt.
(*b*) Working expenses of railways and tramways.
(*c*) Justice.
(*d*) Police.
(*e*) Penal establishments.
(*f*) Education.
(*g*) Medical and charitable.
(*h*) All other expenditure.

Of these items that of working expenses of railways and tramways was the most important, and for the year 1909-10 represented about 30 per cent. of the aggregate expenditure from the Consolidated Revenue Fund. Next in order for that year was the

item of interest and sinking fund in connection with the public debt, then education, medical and charitable, police, justice, and penal establishments in the order named.

2. **Total Expenditure.**—The total expenditure from Consolidated Revenue Funds in the several States during each of the years 1901-2 to 1909-10 is furnished in the table given hereunder :—

STATE EXPENDITURE FROM CONSOLIDATED REVENUE FUNDS, 1901-2 to 1909-10.

Year.	N.S. Wales.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
1901-2 ...	11,020,105	7,398,832	3,967,001	2,823,578	3,151,427	870,442	29,231,385
1902-3 ...	11,467,235	6,759,960	3,717,806	2,641,789	3,521,763	850,685	28,959,238
1903-4 ...	11,319,888	7,339,608	3,607,864	2,707,254	3,698,312	879,356	29,552,282
1904-5 ...	11,195,075	7,343,742	3,581,403	2,860,894	3,745,224	840,184	29,566,522
1905-6 ...	11,386,864	7,261,475	3,725,712	3,004,974	3,632,318	853,147	29,864,490
1906-7 ...	11,876,657	7,679,143	3,911,797	3,394,999	3,490,182	913,762	31,266,540
1907-8 ...	12,095,593	7,862,246	4,373,097	3,862,336	3,379,006	929,885	32,502,163
1908-9 ...	12,893,662	8,240,177	4,759,231	3,760,005	3,370,530	960,237	33,983,842
1909-10 ...	13,038,150	8,579,980	5,113,578	4,196,493	3,447,732	997,321	35,373,254

As in the case of the table previously given for revenue, the above figures relate to the year ended 30th June, except in the cases of 1901-2, 1902-3, 1903-4, which contain Tasmanian figures for the years ended 31st December, 1901, 1902, and 1903 respectively.

3. **Expenditure per Head.**—Owing to the varying conditions of the several States and the extent to which the different functions of Government are distributed therein between central and local governing authorities, the expenditure per head from Consolidated Revenue Funds differs materially in the several States, being highest in the case of Western Australia and lowest in that of Tasmania. Three of the States, viz., Western Australia, South Australia and Queensland are above the Commonwealth average per head, and the other three States below. The expenditure per head of population for each State for the years 1901-2 to 1909-10 is as follows:—

STATE EXPENDITURE PER HEAD, 1901-2 to 1909-10.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1901-2 ...	8 0 3	6 2 2	7 16 10	7 14 5	16 4 8	5 1 5	7 12 10
1902-3 ...	8 3 5	5 11 7	7 5 7	7 4 1	16 10 2	4 18 5	7 9 2
1903-4 ...	7 18 7	6 1 5	7 0 0	7 6 10	16 5 11	4 19 5	7 10 6
1904-5 ...	7 13 8	6 1 4	6 17 4	7 13 6	15 9 2	4 13 3	7 8 5
1905-6 ...	7 12 8	5 19 2	7 1 1	7 18 11	14 5 1	4 14 3	7 7 5
1906-7 ...	7 15 7	6 4 8	7 6 2	8 16 11	13 6 8	5 1 5	7 11 10
1907-8 ...	7 14 2	6 6 0	8 1 5	9 16 9	12 18 4	5 1 1	7 14 11
1908-9 ...	8 2 0	6 9 8	8 12 4	9 4 8	12 12 4	5 3 4	7 19 0
1909-10 ...	8 0 9	6 11 8	8 18 7	10 1 9	12 12 1	5 6 9	8 1 9

In all the States with the exception of Western Australia and New South Wales increases in the expenditure per head took place during the year 1909-10, ranging from 17s. 1d. per head in the case of South Australia, to 2s. per head in that of Victoria. In Western Australia a decrease of 3d. per head was experienced, and in the case of New South Wales a decrease of 1s. 3d. per head.

4. **Details of Expenditure for 1909-10.**—The following table furnishes for the year 1909-10 particulars as to the expenditure of the several States under each of the principal heads :—

DETAILS OF STATE EXPENDITURE, 1909-10.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Public debt (int., sinking fund, &c.)	3,562,021	2,154,547	1,635,270	1,667,732	1,006,306	422,930	10,448,806
Rlwys. & tramways (working exps.)	4,292,070	2,788,646	1,412,105	1,112,675	1,112,060	211,677	10,929,233
Justice	285,481	166,103	78,605	32,618	54,774	11,708	629,289
Police	450,121	293,846	198,626	97,439	113,760	39,740	1,193,532
Penal establishments	79,814	49,869	24,174	18,225	28,230	5,698	206,010
Education	1,141,752	956,265	407,389	213,480	199,653	85,503	3,004,072
Medical and charitable	643,296	444,827	231,563	124,399	167,961	52,703	1,664,749
All other expenditure	2,583,565	1,725,877	1,125,846	929,925	764,988	167,362	7,297,563
Total	13,038,150	8,579,980	5,113,578	4,196,493	3,447,732	997,321	35,373,254

5. **Expenditure per Head, 1909-10.**—The expenditure per head of population of the several States for the year 1909-10, under each of the principal items, is given hereunder :—

STATE EXPENDITURE PER HEAD, 1909-10.

Particulars	N.S.W	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Public debt, (interest, sinking fund, &c.)	2 3 10	1 13 1	2 17 2	4 0 2	3 13 7	2 5 3	2 7 10
Railways and tramways (working expenses) ...	2 13 0	2 2 10	2 9 4	2 13 6	4 1 3	1 2 8	2 10 0
Justice	0 3 6	0 2 6	0 2 9	0 1 7	0 4 0	0 1 3	0 2 11
Police	0 5 7	0 4 6	0 6 11	0 4 8	0 8 4	0 4 3	0 5 4
Penal establishments ...	0 1 0	0 0 9	0 0 10	0 0 11	0 2 1	0 0 7	0 0 11
Education	0 14 1	0 14 8	0 14 2	0 10 3	0 14 7	0 9 2	0 13 9
Medical and charitable ...	0 7 11	0 6 10	0 8 1	0 6 0	0 12 4	0 5 8	0 7 7
All other expenditure ...	1 11 10	1 6 6	1 19 4	2 4 8	2 15 11	0 17 11	1 13 5
Total	8 0 9	6 11 8	8 18 7	10 1 9	12 12 1	5 6 9	8 1 9

In three of the States, viz., Western Australia, South Australia, and Queensland, the average State expenditure per head exceeded that for the Commonwealth as a whole, falling short of it in the other three States.

6. **Relative Importance.**—The relative importance of the items of expenditure enumerated above varies considerably in the several States. This will readily be seen from the following table, giving for each State the percentage of the expenditure under the various items, on the total expenditure for the State :—

PERCENTAGE ON TOTAL STATE EXPENDITURE, 1909-10.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	%	%	%	%	%	%	%
Public debt (interest, sinking fund, &c.)	27.32	25.11	31.98	39.75	29.19	42.41	29.54
Railways and tramways (working expenses) ...	32.92	32.50	27.61	26.51	32.25	21.22	30.90
Justice	2.19	1.94	1.54	0.78	1.59	1.17	1.78
Police	3.45	3.42	3.88	2.32	3.30	3.99	3.37
Penal establishments ...	0.61	0.58	0.47	0.43	0.82	0.57	0.58
Education	8.76	11.15	7.97	5.09	5.79	8.57	8.49
Medical and charitable ...	4.93	5.18	4.53	2.96	4.87	5.28	4.71
All other expenditure... ...	19.82	20 12	22.02	22.16	22.19	16.79	20.63
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Taken together, the interest and sinking fund on the public debt, and the working expenses of the railways and tramways, represented for the year 1909-10 about 60 per cent. of the aggregate State expenditure.

(c) Balances.

1. **Position on 30th June, 1910.**—On various occasions in each of the States the revenue collected for a financial year has failed to provide the funds requisite for defraying the expenditure incurred during that year, the consequence being a deficit which is usually liquidated either by cash obtained from trust funds, or by the issue of Treasury bills. In some of the States a number of such deficits has occurred, interspersed with occasional surpluses, the result being an accumulating overdraft, which in certain instances assumed very large proportions. Thus during the period of financial stress resultant upon the crisis of 1893 and the drought conditions of succeeding years, the accumulated overdrafts of several of the States grew very rapidly. The very favourable financial conditions of recent years have enabled the various Treasurers to considerably reduce such liabilities from time to time, and at 30th June, 1910, the position of the balances of the several Consolidated Revenue Funds were as set forth in the table hereunder :—

STATE CONSOLIDATED REVENUE FUND BALANCES, 30th JUNE, 1910.

State.	Cash Credit Balances.	Debit Balance.		Net Result.
		Cash Overdraft.	Overdraft liquidated by Treasury Bills	
	£	£	£	£
New South Wales	989,707	...	659,337	Cr. 330,370
Victoria	...	314,975	...	Dr. 314,975
Queensland	5,675	...	...	Cr. 5,675
South Australia	*472,755	†163,601	...	Cr. 309,154
Western Australia	...	102,692	...	Dr. 102,692
Tasmania	...	...	51,271	Dr. 51,271
Total	1,468,137	581,268	710,608	Cr. 176,261

* South Australia proper. † Northern Territory.

(d) Principal State Taxes.

(a) Probate and Succession Duties.

1. **General.**—Probate duties have been levied for a considerable time in all the States of the Commonwealth. From the provisions of the several State Acts governing the payment of duty which are outlined hereunder, it will be seen that both the ordinary rates and those which apply to special beneficiaries differ widely in several cases. In the following table the amount under which the estates of deceased persons were sworn, is shewn for the years 1905 to 1909 :—

VALUE OF ESTATES OF DECEASED PERSONS, 1905 to 1909.

State.	1905.	1906.	1907.	1908.	1909.
	£	£	£	£	£
New South Wales ...	7,714,416	7,529,437	7,563,499	7,838,572	11,142,068
Victoria	6,003,478	6,424,738	6,860,143	7,128,085	6,480,376
Queensland	1,016,495	1,794,742	1,670,184	1,376,255	1,508,783
South Australia ...	1,294,968	2,041,280	1,923,954	2,105,351	1,939,509
Western Australia ...	676,920	544,245	1,154,126	955,995	939,318
Tasmania	504,196	862,222	841,227	*841,227	722,011
Commonwealth ...	17,210,473	19,196,664	20,013,133	20,245,485	22,732,065

* Figures for 1907; later returns not available.

The duty collected in the several States for the financial years 1905-6 to 1909-10 is as follows:—

AMOUNT OF PROBATE AND SUCCESSION DUTIES COLLECTED, 1905-6 to 1909-10.

State.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.
	£	£	£	£	£
New South Wales ...	290,729	289,901	310,704	301,681	650,202
Victoria	328,628	401,631	304,830	418,418	358,173
Queensland*	67,935	71,399	42,788	57,012	61,193
South Australia ...	59,970	60,204	70,227	86,344	84,651
Western Australia ...	15,707	34,309	41,688	20,132	57,416
Tasmania	26,336	26,602*	32,087	28,641	44,267
Commonwealth ...	789,305	884,046	802,324	912,228	1,255,902

* Approximate.

2. **New South Wales.**—(i.) *Legislation.* The Acts relative to probate and succession duties at present in force in New South Wales are, in chronological order, as follows:—

(*a*) Wills, Probate and Administration Act 1898.
(*b*) Stamp Duties Act 1898, and Amendment of, 1904.
(*c*) Probate Duties (Amendment) Act 1899.
(*d*) Administration (Validating) Act 1900.
(*e*) Companies (Death Duties) Act 1901.
(*f*) Administration Amending Act 1906.

The first-named Act, assented to on 27th July, 1898, repealed, amongst others, the Probate Act of 1890 (two sections excepted), and also the Probate Amendment Act of the same year. On the same day, 27th July, assent was also given to the Stamp Duties Act, the rates of duty contained in which were in force until the passing of the Probate Duties (Amendment) Act on 22nd December, 1899, when its schedule was repealed and a new rate of duty was imposed.

The Administration (Validating) Act of 1900 was passed in order to validate certain orders of the Supreme Court giving power or leave to sell, mortgage or lease, the real estate of deceased persons.

The Companies (Death Duties) Act of 1901 relates to the registration of any company incorporated according to the laws of some country other than New South Wales carrying on the business (*a*) of mining for any minerals in New South Wales, or (*b*) of pastoral or agricultural production or timber getting in New South Wales, and to the imposition of duties on the death of shareholders of those companies.

(ii.) *Rates of Duty.* In lieu of the duties payable on probate and letters of administration as provided for by the Stamp Duties Act of 1898, the following rates are now payable on the total value of the estate of a deceased person after the deduction of all debts, as enacted by the Amending Act of 1899, viz.—Up to £1000, nil; above £1000 and up to £5000, 2 per cent.; then up to £6000, 3 per cent.; then increasing ½ per cent. for each £1000 up to £10,000, for each £2000 up to £40,000, and for each £4000 up to £100,000, the last group, £96,000 to £100,000, being subject to 9⅘ per cent. Above £100,000 the duty is 10 per cent. Property left by the deceased to his widow or children is subject to half the foregoing rates, if the total value of the estate, after the deduction of all debts, does not exceed £50,000.

3. **Victoria.**—(i.) *Legislation.* The Acts contained in the subjoined list regulate the probate and succession duties of Victoria:—

(*a*) No. 1060, Administration and Probate Act 1890, with its amendments of 1891, 1892, 1898, 1903, and 1907.
(*b*) No. 1419, Intestate Estates Act 1896.
(*c*) No. 1827, Probate Charges Act 1903, and its amendment No. 1970 of 1905.
(*d*) No. 1862, Administration and Probate Duties Act 1903, with its amendments of 1904, 1905, 1906, 1907, 1908, and 1909.

The principal Act, the Administration and Probate Act 1890, was assented to on 10th July, 1890, and came into force on 1st August of the same year. It repealed Acts Nos. 338, 403, 427, 523, 900, 928, 1035 and 1053, and enacted a scale of duties which was enforced until 1st January, 1903, when the Administration and Probate Act of 1903 came into force.

(ii.) *Rates of Duty.* The last-mentioned Act provides for the following scale of duties on the estate, real and personal, of deceased persons, after the deduction of all debts, viz. :—Less than £200, nil ; above £200 and up to £300, 1½ per cent. ; then increasing ½ per cent. for each £100 up to £600 ; then increasing ⅓ per cent. for each £200 up to £1000 ; above £1000 and up to £1500, 4 per cent. ; then increasing ¼ per cent. for each £500 up to £6000 ; then increasing ⅕ per cent. for each £1000 up to £19,000; with the exception of the two stages £10,000 to £11,000 and £14,000 to £15,000, which involve an increase of ⅖ per cent. and whose rates are respectively 7⅕ and 8⅕ per cent. ; over £19,000 and up to £20,000, 9½ per cent. ; and over £20,000, 10 per cent. is charged.

The rates of duty as shewn above also apply to all settlements of property, both real and personal, where the person taking the property is a brother or sister, or descendant of a brother or sister, or by any other person in any other degree of collateral consanguinity to the settlor, but duty at the rate of 10 per cent. is payable on the value of property taken by a stranger in blood to the settlor or donor.

(iii.) *Special Rates.* Property left by the deceased to his widow, children or grandchildren, is subject to the following rates, except that in cases where the total value of the estate after payment of all debts does not exceed £2000 half these rates only are charged :—Up to £500, nil ; over £500 and up to £1000, 1 per cent. ; over £1000 and up to £2000, 3 per cent. ; then increasing by ½ per cent. for each £1000 up to £5000, and by ¼ per cent. for each £1000 up to £8000 ; over £8000 and up to £10,000, 5 per cent. ; increasing thence by ½ per cent. for each £2000 up to £24,000, for each £4000 up to £80,000, and for each £5000 up to £100,000, the last group £95,000 to £100,000 being subject to 9⅘ per cent. ; over £100,000, the amount payable is 10 per cent.

4. **Queensland.**—(i.) *Legislation.* The collection of probate and succession duties in Queensland is governed by the following Acts :—

(*a*) The Succession and Probate Duties Act 1892.
(*b*) The Succession Act Amendment Act 1895.
(*c*) The Succession and Probate Duties Amendment Act 1895.
(*d*) The Succession and Probate Duties Act 1904.
(*e*) The Succession Act 1906.
(*f*) The Succession and Probate Amendment Act 1906.

The principal Act, the Succession and Probate Duties Act of 1892, which was assented to on 4th October, 1892, and taken as coming into force on 7th September previous, repealed the Succession Duties Act of 1886, and enacted a scale of duties which is still levied.

(ii.) *Rates of Succession Duty.* If the whole succession or successions derived from the same predecessor, and passing upon death to any person, amount in money or principal value to less than £200, no duty is payable; where the value is £200 and less than £1000, 2 per cent. is due; £1000 and less than £2500, 3 per cent.; £2500 and less than £5000, 4 per cent.; £5000 and less than £10,000, 6 per cent.; £10,000 and less than £20,000, 8 per cent.; and when the value is £20,000 or upwards, 10 per cent. is charged.

(iii.) *Special Rates.* Duty at one-half of the above rates is payable when the successor is the wife or husband, or the lineal issue of the predecessor ; and at double the rates if the successor is a stranger in blood to the settlor.

(iv.) *Probate and Administration.* In addition to the foregoing succession duties a probate duty of 1 per cent. is payable on all estates having a net value of £300 or over. When the net value of the property of a deceased person does not amount to £300 it is exempt from duty.

(v.) *Exemptions.* Bequests for educational and charitable purposes in Queensland are exempt from taxation.

5. **South Australia.**—(i.) *Legislation.* Under the four Acts given hereunder the probate and succession duties are collected in South Australia :—

(*a*) No. 537, The Administration and Probate Act 1891.
(*b*) No. 567, The Succession Duties Act 1893.
(*c*) No. 819, The Administration and Probate Act 1903.
(*d*) No. 854, The Administration and Probate Amendment Act 1904.

On 25th October, 1893, the Succession Duties Act was assented to, and by it the Probate and Succession Duty Act of 1876, and its two amendments, Nos. 225 of 1881 and 361 of 1885, were repealed.

(ii.) *Rates of Duty.* On the property derived by any beneficiary the duties are assessed on the net value, and the following scale applies where the person taking the property is the widow, widower, descendant or ancestor of the deceased; and likewise where the property is given or accrues to any of the above-mentioned persons under a settlement or deed of gift:—Under £500, *nil;* over £500 and up to £700, 1½ per cent.; over £700 and up to £1000, 2 per cent.; over £1000 and up to £2000, 3 per cent.; over £2000 and up to £3000, 3½ per cent.; increasing thence by ½ per cent. for each £2000 up to £7000; over £7000 and up to £10,000, 5 per cent.; increasing thence by ½ per cent. for each £5000 up to £20,000, for each £10,000 up to £40,000, for each £20,000 up to £100,000, and for each £50,000 up to £200,000, the duty from £150,000 to £200,000 being 9½ per cent.; above £200,000 the duty is 10 per cent.

Where the person taking the property is a brother, sister, descendant of a brother or sister, or any person in any other degree of collateral consanguinity to the deceased person, or where the property is given or accrues to any of the aforesaid persons under a settlement or deed of gift, the duty is reckoned on the net present value of such property, and is payable at the rates shewn hereunder:—Under £200, 1 per cent.; up to £300, 1½ per cent.; up to £400, 2 per cent.; up to £700, 3 per cent.; up to £1000, 3½ per cent.; up to £2000, 4 per cent.; thence increasing 1 per cent. up to each of the following amounts:—£3000, £5000, £10,000, £15,000, and £20,000; above £20,000 10 per cent. is payable.

If the person taking the property, either by will or under a settlement or deed of gift, is a stranger in blood to the deceased or the settlor or donor, as the case may be, duty is charged at the rate of 10 per cent. on the net present value of the property.

(iii.) *Special Rates.* Duty at one-half the rates shewn above is levied when the person who takes is the child under twenty-one years of age or the widow of the deceased or the settlor or donor, provided that the net value of the whole estate be under £2000.

6. **Western Australia.**—(i.) *Legislation.* The only Acts relating to probate and succession duties at present in force in Western Australia are the Administration Act of 1903, which was assented to on 31st December, 1903, and the Administration Act Amendment Act 1909. The former repealed a number of Acts, including the Real Estates Administration Act 1893 and the Duties on Deceased Persons' Estates Act 1895. The latter levied the following scale of duties:—

(ii.) *Rates of Duty.* When the total value of the estate, real or personal, of a deceased person, or of the property given or accruing to any person under a settlement or deed of gift, does not, after the deduction of all debts, exceed £500, duty is payable at

the rate of 1 per cent.; where the value exceeds £500, but does not exceed £1000, 2 per cent. is charged; £1000 and under £2500, 3 per cent.; £2500 and under £4500, 4 per cent.; £4500 and under £6000, 5 per cent.; £6000 and under £7000, 6 per cent.; £7000 and under £8000, 6⅖ per cent.; £8000 and under £9000, 6⅗ per cent.; £9000 and under £10,000, 6⅘ per cent.; £10,000 and under £11,000, 7½ per cent.; £11,000 and under £12,000, 7⅖ per cent.; £12,000 and under £13,000, 7⅗ per cent.; £13,000 and under £14,000, 7⅘ per cent.; £14,000 and under £15,000, 8½ per cent.; £15,000 and under £16,000, 8⅖ per cent.; £16,000 and under £17,000, 8⅗ per cent.; £17,000 and under £18,000, 8⅘ per cent.; £18,000 and under £19,000, 9 per cent.; £19,000 and under £20,000, 9½ per cent.; £20,000 and above, 10 per cent.

(iii.) *Special Rates.* Half the above rates are charged the parent, issue, husband, wife, and issue of husband or wife, who are *bonâ-fide* residents of, and domiciled in, Western Australia.

7. **Tasmania.**—(i.) *Legislation.* The duties imposed in connection with probates and letters of administration in Tasmania are provided for by the following Acts:—

(*a*) The Deceased Persons' Estates Act of 1874 and 1881.
(*b*) The Probate (Foreign) Act 1893.
(*c*) The Probate Act 1893, with amendment in 1906.
(*d*) The Deceased Persons' Estate Management Act 1903.
(*e*) The Deceased Persons' Estates Duties Act 1904.
(*f*) The Death Duties (Deductions) Act 1909.

The Probate Duties Act of 1868 levied a scale of rates which remained in force until the passing of the Deceased Persons' Estates Duties Act in 1904, when the former Act was repealed and a new schedule came into operation. The Death Duties (Deductions) Act provides for the deduction from death duties of the amount of duty payable in the United Kingdom in respect of property situated therein.

(ii.) *Rates of Duty.* Duty at the rates given below is payable on the property derived from a deceased person, or comprised in a settlement or deed of gift in so far as it includes, or is a portion of—

(*a*) His real and personal property in Tasmania, including that over which he had a general power of appointment, exercised by his will, or by the settlement or deed of gift, if the deceased was, at the time of his death, domiciled in Tasmania.
(*b*) His personal property, as above, including all debts, money, etc., recoverable in action by the executor in Tasmania, if the deceased was, at time of death, domiciled elsewhere than in Tasmania; and
(*c*) Property accruing to any husband by virtue of his right as husband on the decease of his wife.

When the value of the property of the deceased person, settlor, or donor, as the case may be, at the time of his death exceeds £500, and does not exceed £1000, 2 per cent. is payable; exceeding £1000 and not exceeding £2000, 2½ per cent.; £2000 and not over £5000, 3 per cent.; £5000 and not over £20,000, 4 per cent.; £20,000 and not over £100,000, 5 per cent.; and over £100,000, 10 per cent.

(iii.) *Special Rates.* Double the above rates are charged when the property is derived by, or given or accrues to a brother or sister, or the child of a brother or sister of the deceased person, settlor, or donor, but in no case is a duty of more than 10 per cent. payable. When the property is derived by a stranger in blood to the deceased person, settlor, or donor, or accrues to any collateral relation beyond the third degree, the duty is 10 per cent. on the value of the property of any value whatever. No duty is payable in respect of any money which is payable to any person by a friendly society upon the death of a member or his wife or child.

(*b*) Stamp Duties.

1. **Legislation in the Several States.**—The principal Acts at present in force in the several States relating to stamp duties are as follows:—

(*a*) *New South Wales.* Stamp Duties Act 1898, with amendments in 1900, 1904, and 1907.
(*b*) *Victoria.* Stamps Act 1890, with amendments in 1892, 1900, 1904, and 1908.
(*c*) *Queensland.* Stamp Act 1894, with amendment in 1904.
(*d*) *South Australia.* Stamp Act 1886, with amendment in 1902.
(*e*) *Western Australia.* Stamp Act 1882, with amendments in 1905 and 1906.
(*f*) *Tasmania.* Stamp Duties Act 1882, with amendments in 1886, 1888, 1892, 1900 and 1904.

These Acts provide for the payment of duty on bank notes, bills of exchange, and promissory notes, deeds, leases, policies, receipts, transfers, and so forth, all of which with the exception of bank notes are required to be stamped either by an impressed or adhesive stamp, as the case may be.

The revenue derived by the several States of the Commonwealth from the imposition of stamp duties for the years 1905-6 to 1909-10 is shewn in the accompanying table :—

STAMP REVENUE (EXCLUSIVE OF PROBATE AND SUCCESSION DUTIES),
1905-6 TO 1909-10.

State.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.
	£	£	£	£	£
New South Wales	299,165	343,666	254,538	205,022	222,720
Victoria	222,697	240,373	240,535	237,681	250,358
Queensland	99,631	119,397	142,573	132,073	145,556
South Australia	66,480	75,034	79,547	89,160	97,877
Western Australia	59,200	63,634	59,617	58,065	62,714
Tasmania	54,080	57,198	58,832	53,713	54,741
Commonwealth ...	801,253	899,302	835,642	775,714	833,966

2. **Bank Notes.**—Promissory notes issued by any bank are not required to bear a duty stamp either impressed or adhesive, and may be reissued as often as thought fit. An annual composition has, however, to be paid in lieu of stamp duty. This composition is payable quarterly, and is the same in all States, being at the rate of £2 per annum on every £100 or part thereof of the average annual amount of bank notes in circulation. On 2nd June, 1893, the Treasury Notes Act of Queensland was assented to, by which the issue of Treasury notes payable on demand was authorised. These notes were used exclusively by the banks in that State, but their issue has been prohibited by the Federal Bank Note Tax Act. (See Section xxi., Private Finance.)

The issue of bank notes by any bank is likely to be seriously restricted in the future by this Act, which passed the Federal Parliament in the session of 1910, and was assented to on 10th October, 1910. Further reference is made to the Act in the section dealing with Private Finance. It is enough to say here that it imposes a tax of 10 per cent. per annum on all bank notes issued or re-issued by any bank in the Commonwealth after the commencement of the Act and not redeemed.

3. **Bills of Exchange and Promissory Notes.**—(i.) *Rates.* In all the States except New South Wales, when a bill of exchange or promissory note is payable on demand, the rate charged is one penny. When the bill was not payable on demand the duty levied in New South Wales, until the Amendment Act of 1907 came into force on 1st January, 1908, was sixpence for every £25 or part thereof, but under this Act no duty is now payable on bills of exchange or promissory notes in that State. The rate in Victoria for all bills of exchange was sixpence for every £25* up to £100, and one shilling for every £50 over £100, but under the Act of 1908 these rates only apply to those bills both drawn in, and payable in Victoria, all others being free from duty. One shilling is charged in Queensland for every £50. For every £25 the duty in South Australia is sixpence if the bill is

* "Or fractional part thereof" is to be understood after all amounts mentioned.

negotiable in the Commonwealth, but when a bill is drawn in South Australia and payable in any place beyond the Commonwealth, one shilling is charged for every £100, in which case an adhesive stamp only is to be used. In Western Australia, when the amount of the bill does not exceed £25 the duty payable is sixpence, when it exceeds £25 the duty is increased by sixpence for every £25 up to £100, and when it exceeds £100, one shilling for every £50 is charged. An amount of threepence is levied in Tasmania for a bill not exceeding £5 ; sixpence for one exceeding £5 and under £25 ; and an additional sixpence for every succeeding £25.

(ii.) *Exemptions.* The chief classes of bills which are exempt from taxation are Government debentures, Treasury notes, drafts on account of Public Service, drafts by banker on banker, letters of credit in the State, etc.

4. **Bills of Lading.**—(i.) *Rates.* The charge made for a bill of lading or copy thereof is sixpence in four of the States, viz., New South Wales, Victoria, South Australia, and Tasmania. In Queensland the rate is one shilling, and for a receipt of a bill of lading sixpence, whilst in Western Australia the duty is threepence if the goods do not exceed half a ton in weight or measurement, and sixpence if the goods exceed that quantity. The Acts provide that no bill of lading is to be stamped after its execution.

5. **Receipts.**—(i.) *Rates.* The duty payable on receipts given on payment of the amount of £2 or upwards in the States of Victoria, South Australia and Western Australia is one penny. Under the provisions of the Stamp Duties Act of 1898 the rate in New South Wales was twopence for £2 or over, but this was repealed by the Stamp Duties Amendment Act of 1907, and no duty is now payable on receipts in that State. Acknowledgments for payment of £1 or upwards were taxed one penny in Queensland under the 1894 Act, but by Amendment Acts of 1901, 1903 and 1904, the first two of which have since been repealed, it was provided that amounts of £1 and less than £2 were to be taxed one penny ; £2 and less than £50, twopence; £50 and less than £100, threepence ; and £100 or over, sixpence for every £100 or part thereof. By the 1904 Amendment Act of Tasmania, receipts for sums amounting to £2 and not over £5 are subject to a duty of one penny, and when the amount exceeds £5, one penny is charged for every additional £10 or part thereof, provided that the maximum duty on any receipt is fourpence.

(ii.) *Exemptions.* The exemptions from payment of duty on receipts vary considerably in the several States, and amongst others may be mentioned the following :—On His Majesty's Service, banker's receipt for bill of exchange or promissory note, current accounts, savings bank accounts, municipal rates, money orders and postal notes, wages received by labourers, workmen, menial servants, etc.

(c) Land Tax.

1. **General.**—Queensland is the only State in the Commonwealth in which a land tax is not levied, although it was not until as recently as 1907 that the first tax on land was imposed in Western Australia. In all of the other States the tax dates back to a much earlier period.

The following table shews the amount collected by means of such taxes during the financial years 1905-6 to 1909-10 in the States in which a land tax was imposed :—

LAND TAX COLLECTIONS, 1905-6 to 1909-10.

State.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.
	£	£	£	£	£
New South Wales	336,785	345,497	178,889	80,794	9,066
Victoria	103,536	92,438	89,496	85,559	114,357
South Australia	94,601	90,200	93,762	92,158	94,126
Western Australia	...	...	11,140	33,120	34,344
Tasmania	54,776	56,065	57,742	59,651	79,021
Commonwealth	589,698	584,200	431,029	351,282	330,914

2. **New South Wales.**—(i.) *Legislation.* The following Acts relating to the levying, assessment, and collection of land tax are at present in force in New South Wales:—

(*a*) Land and Income Tax Assessment Act 1895, with amendments in 1896, 1897, 1898, and 1904.
(*b*) Land Tax Act 1895, with amendments in 1899, 1900, and 1902.
(*c*) Local Government Act 1906.

The principal Act, the Land and Income Tax Assessment Act of 1895, which was enacted for the purpose of establishing a system of direct taxation by means of a tax on land, as well as for other objects, was assented to on 12th December of that year. The Land Tax Act of 1895, assented to on the same day as the above-mentioned Act, provided for a tax which was amended in respect of certain leased lands by the amending Act of 1902, and suspended in cases, which will hereinafter be referred to, by the Local Government Act of 1906.

(ii.) *Rates.* Under the provisions of the principal Act a tax is levied on the unimproved value of all land after the deduction of £240, which deduction is only made once in the case of an owner of more estates than one. Land that is subject to mortgage is liable to a deduction each year from the tax on the unimproved value of a sum equal to the income tax leviable for that year on the interest derivable from the whole mortgage on the land, improvements included. A tax of one penny in the £ of the unimproved value was declared by the Land Tax Act of 1895. The Act of 1902, which only applies to land while it is subject to a lease from the owner which was current at the end of the year 1902, and of which not less than thirty years were at such time unexpired, and land that is subject to a lease from the owner made after the commencement of the Act for a term of not less than thirty years, provided for a similar tax to be paid conjointly by owners and lessees, according to an adjustment made by the Commissioners. Under the Local Government Act of 1906 the operation of the land tax is suspended in the case where a shire or municipality has levied a tax on the unimproved capital value of the ratable land within its boundaries.

(iii.) *Exemptions.* Some of the principal lands on which no taxation is payable are as follows:—

(*a*) Crown lands which are not liable to right of purchase, and lands held by way of conditional or special lease and homestead selections under any Crown Lands Act.
(*b*) Lands vested in His Majesty or in any person for or on behalf of His Majesty.
(*c*) Lands vested in the Railway Commissioners.
(*d*) Public roads and thoroughfares; reserves for health, recreation or enjoyment, parks, cemeteries, etc.
(*e*) Lands occupied or used exclusively for public hospitals, benevolent and charitable institutions, churches, universities, affiliated colleges, mechanics' institutes, etc., and lands on which are erected public markets, town halls, etc., and land vested in any council, municipality, hospital, or affiliated college.
(*f*) Land vested in trustees for the use of agricultural, horticultural, pastoral or zoological show purposes.
(*g*) Land used exclusively for the site of a residence of a minister of religion ministering at some place of public worship, and land used as a site for a school attached to, or connected with, any place of public worship.

3. **Victoria.**—(i.) *Legislation.* The Land Tax Act of 1910, which repealed the Act of 1890, now governs the taxation of land in Victoria. Under this Act a tax is levied on all land whose unimproved value exceeds £250. As the unimproved value rises above £250 the exemption diminishes at the rate of £1 for every £1 of excess, so as to leave no exemption at £500. There is a uniform rate of ½d. per £ of unimproved value, and no amount less than two shillings and sixpence is collected.

The subjoined is a list of the principal lands that are free from taxation :—

(*a*) Land, the property of His Majesty the King.

(*b*) Land used for public worship, recreation, or educational purposes ; all parks, show-grounds, etc. ; the University and its affiliated Colleges.

(*c*) Land, vested in a municipality or a church.

(*d*) Land vested in Railway Commissioners, Commissioner of Savings Banks, Melbourne and Geelong Harbour Trusts, Melbourne and Metropolitan Board of Works, etc.

4. **South Australia.**—(i.) *Legislation.* The administration of the land tax in South Australia is governed by the following Acts:—

(*a*) Taxation Act 1884, with amendments in 1885, 1887, 1894, 1900, 1902, 1903, 1904, and 1905.

(*b*) Increase of Taxes Act 1902.

On 14th November, 1884, the principal Act, viz., the Taxation Act, was assented to. It provided for a tax to be paid on the unimproved value of any land in the State of South Australia, but the rate was increased by subsequent Acts, as will be shewn below.

(ii.) *Rates.* The principal Act declared a tax of one half-penny for every £1 sterling in the amount of the taxable value, and the amending Act of 1894 imposed an additional tax of one half-penny for every £1 exceeding the amount of £5000 of the total assessed unimproved value owned by any party. Under the provisions of the Increase of Taxes Act of 1902 the general rate was augmented by one farthing in the £1 for the year 1903 only. This was repeated in 1904 for the year 1905 only. The last-mentioned Act also increased by one farthing the tax payable on land valued over £5000, as provided in the Act of 1894 for the one year only, the present rate payable on property exceeding £5000 in value being, therefore, one penny for every £1 of the total assessed unimproved value over that amount. In the case of absentees an addition of 20 per cent. to these rates is provided for under the Amending Act of 1894. Under this Act absenteeism consisted of absence from the State of South Australia for the period of two years prior to the date on which the tax became due, but the duration of absence was reduced to twelve months by the amendment Act of 1904.

(iii.) *Exemptions.* The subjoined is a list of lands that are free from taxation:—

(*a*) Land of the Crown which, for the time being, is not subject to any agreement for sale or right of purchase.

(*b*) Park lands, public roads, cemeteries, and reserves.

(*c*) Land used solely for religious or charitable purposes, or by any public institute.

5. **Western Australia.**—(i.) *Legislation.* The Land and Income Tax Assessment Act of 1907—the first Act relating to the payment of a tax on land in Western Australia—was assented to on 20th December, and came into force on 1st January following. A tax on the unimproved value of land was imposed by the Land Tax and Income Tax Act, which received assent and came into force on the same day as the above-mentioned Act.

(ii.) *Rates.* A tax at the rate of one penny for every pound sterling of the unimproved value of land is charged, provided that the aggregate value of the land held exceeds £50. A rebate of one half of the tax levied is allowed to every owner of improved land.

(iii.) *Exemptions.* The lands specified below are exempt from assessment for taxation:—

(*a*) All lands held by or on behalf of His Majesty.

(*b*) Public roads and thoroughfares, public reserves for health, recreation, or enjoyment, and public parks, university endowments, cemeteries and commons.

(*c*) Land used in connection with any public hospital, benevolent, charitable or religious institution, mechanics' institute, school of arts, etc., and land on which is erected any State market, town hall, or municipal chambers.

(*d*) All lands held as mining tenements, and lands dedicated to, or vested in trustees, and used for zoological, agricultural, pastoral, or horticultural show purposes, or other public scientific purposes.

(*e*) Land, the unimproved value of which does not exceed £50.

6. **Tasmania.**—(i.) *Legislation.* The Land Tax and Income Tax Act of 1910 governs this form of taxation in Tasmania. According to it a land-owner pays in respect of every pound sterling of unimproved value according to the following scale.

(ii.) *Rates.* When the total unimproved value is less than £2500, 1d. in the pound is payable; £2500 and under £5000, 1¼d.; £5000 and under £15,000, 1½d.; £15,000 and under £30,000, 1¾d.; £30,000 and under £50,000, 2d.; £50,000 and under £80,000, 2¼d.; £80,000 and above, 2½d.

(iii.) *Exemptions.* The number of exemptions as contained in the principal Act is too lengthy to be given in detail, and a few of the most important only are herewith appended:—

(*a*) Lands of the Crown which, for the time being, are not subject to lease, sale etc., and land the property of and occupied by or on behalf of His Majesty.

(*b*) Botanical gardens at Hobart and Launceston.

(*c*) Public roads, cemeteries, reserves, and recreation grounds.

(*d*) Land on which is built any public library, museum, hospital or any building used solely for charitable or religious purposes, or State Schools.

(*e*) Any land owned by any local authority, or any local governing or statutory public body.

(*d*) Income Tax.

1. **General.**—A duty on the income of persons, whether it be derived from personal exertion or from the produce of property, is now imposed in all the States of the Commonwealth. As will be seen in dealing with the different States, the rates, exemptions, etc., are widely divergent, but the general principle of the several Acts is strikingly consistent. The Dividend Duties Acts of Queensland and Western Australia—the former of which is now repealed—supplied to a certain extent the place of an income tax in those States in former years, but, with the increasing demands upon the State Treasury, the levying of a direct income tax has been resorted to.

In the following table particulars are furnished concerning the total amount collected in the several States during the years 1905-6 to 1909-10. In the case of Queensland and Western Australia the amount of dividend duty collected is included, as is also the amount of ability tax in Tasmania, these taxes being closely allied to the income-tax.

INCOME, DIVIDEND, AND ABILITY TAXES, 1905-6 to 1909-10.

(STATES.)

State.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.
	£	£	£	£	£
New South Wales	276,299	283,422	215,283	202,369	219,977
Victoria	318,233	355,148	317,354	304,464	338,585
Queensland	264,957	284,476	271,299	273,091	304,693
South Australia	128,756	166,582	212,643	160,777	180,923
Western Australia	137,485	116,916	113,967	134,164	132,180
Tasmania	98,321	116,949	101,433	94,015	110,258
Commonwealth	1,224,051	1,323,493	1,231,979	1,168,880	1,286,616

2. **New South Wales.**—(i.) *Legislation.* The Acts under which the administration of the income tax is carried out in New South Wales are as follows:—

(*a*) Land and Income Tax Assessment Act 1895, with amendments in 1896, 1897, 1898, and 1904.
(*b*) Income Tax Act 1895, with amendment in 1907.
(*c*) Taxation Amending Acts 1905 and 1906.

The Land and Income Tax Assessment Act, which was assented to on 12th December, 1895, and came into force on the first day of the following year, is the principal Act. Under this Act the amount of taxable income from all sources for the year immediately preceding the year of assessment is the amount on which tax is payable, except in the case of income earned outside the State of New South Wales, which is not subject to taxation. The 1898 Act declared that for the purposes of taxation, the extracting from the soil, winning, producing, or manufacturing in the State of any product, commodity or substance and its export, is part of the carrying on of such trade in New South Wales, and the value of such product, etc., when exported, is income earned in the said State.

(ii.) *Rates.* Under the Income Tax Act of 1895 the rate payable in New South Wales is sixpence in the pound on the amount of all incomes which exceed £200 per annum.

(iii.) *Exemptions.* The subjoined is a list of incomes, revenues, and funds which are exempt from the payment of income tax:—

(*a*) Income not exceeding £200 per annum.
(*b*) Revenues of municipal corporations or other local authorities.
(*c*) Incomes of mutual life assurance societies, and of other companies or societies not carrying on business for purposes of profit or gain.
(*d*) Dividends and profits of the Savings Bank of New South Wales, the Post-office Savings Bank, and the income of registered friendly societies.
(*e*) Incomes and revenues of all ecclesiastical, charitable, and educational institutions of a public character.
(*f*) Income derived from the ownership, use, or cultivation of land subject to land tax.

The exemptions declared in sub-sections (*b*) to (*e*) above do not extend to the salaries and wages of persons employed by such corporations, companies, etc.

(iv.) *Deductions.* In the case of a company the person liable to taxation in respect of an income exceeding £200 was, under the principal Act, entitled to a deduction of £200 in the assessment of such income, but by the Amendment Act of 1907, which came into force on 1st January, 1908, it has been provided that the deduction is in the first place to be made from so much of the income as is derived from personal exertion. The latter Act also provides—(*a*) that where the income derived from personal exertion is less than £200 the deduction is to be made to the extent of such income, and any part of the £200

not applied in such deduction is to be taken from the income derived from the produce of property; and (*b*) when the income of any person, not being a company, which is obtained by personal exertion, exceeds £200, he is entitled to a further deduction of the amount by which such income exceeds £200, provided that the total deductions do not, in any case, exceed £1000.

In addition to the above, deductions are allowed on account of losses, repairs, cost of earning incomes, etc., and also on account of expenditure not exceeding £50 per annum on life insurance.

3. **Victoria.**—(i.) *Legislation.* The principal Act in Victoria, the Income Tax Act of 1895, was assented to on 29th January of that year. On the 24th December following the Income Tax Rate Act received assent, and since then, with one exception, an Act has been passed each year declaring rates for the year ending 31st December following the date on which the Act came into force. The first scale of taxation was provided for by the Income Tax Rate Act 1895, and remained in force until 1st January, 1903, when the first amendment of 1903 came into force. The rates contained in the latter Act were superseded when the second amendment of 1903 came into operation, and were further altered by the 1904 Act, the rates of which are in force at present.

(ii.) *Rates.* Under the provisions of the last-mentioned Act a person, not being a company, is subject to the following rates of duty on the amount of his income from personal exertion, viz.—For every £1 up to £500, threepence; over £500 and up to £1000, fourpence; £1000 and up to £1500, fivepence; and over £1500, sixpence; with double these rates if the income be derived from property. Incomes not exceeding £156 were exempt from taxation under this Act, and this exemption was, under the 1906 Act, increased to £200, at which sum it still stands. The minimum income subject to tax is thus £201. Incomes between £201 and £500 are allowed an exemption of £150, while those above £500 pay tax on the full amount. The Act of 1908 provided that the amount of income tax, computed on the above basis, to be payable by a person, not being a company, for the year ending 31st December, 1909, should be reduced by 20 per cent., but this reduction was repealed in 1910. Land used as a residence by the owner is deemed to return 4 per cent. on its actual capital value.

(iii.) *Special Rates.* (*a*) A tax of sevenpence is levied on the income of any company liable to tax, not being a life assurance company, for every pound sterling of the taxable amount thereof, and a similar tax of eightpence on a company which carries on in Victoria the business of life assurance; and (*b*) a tax assessed on five pounds in every £100 of the amount payable to him for the carriage of passengers, live stock, mails, or goods shipped in Victoria, is imposed on every owner or charterer of a ship whose principal place of business is out of Victoria.

(iv.) *Exemptions.* Some of the most important exemptions from taxation are as follows:—

(*a*) Persons whose income does not exceed £200.

(*b*) Income of the Governor, a Minister of the Crown as such, Board of Land and Works, Railway Commissioners, Harbour Trust, Board of Works, Fire Brigades, Savings Bank, University, Working Men's College, or any Public College affiliated to the University.

(*c*) Income of religious bodies, registered friendly, provident, building and trade union societies.

(*d*) Trust societies, associations, etc., not carrying on business for purposes of gain to members; mutual fire insurance companies and fire or marine insurance companies, licensed under the Stamps Acts, whose head office is in Australia, and mining companies.

(*e*) Interest accruing to any person not resident in Victoria from stock, debentures or Treasury bonds of the Government of Victoria, or issued by any public or municipal trust, body or corporation.

(v.) *Deductions.* Expenditure incurred in Victoria by any taxpayer in the production of his income, and all taxes payable by him (income tax excepted) are allowed to be deducted from the gross amount of his income, as is also the amount of all premiums not exceeding £50 paid by a taxpayer in respect of life assurance policies; but no deduction by way of exemption from income tax is permitted to a person who has been out of the State for six consecutive months in the year during which the income was received, or for any sum expended on repairs of premises, implements, etc., used for the purpose of trade, or for bad debts and the maintenance of the families of taxpayers.

4. **Queensland.**—(i.) *Legislation.* The laws under which the income tax of Queensland is regulated are contained in the Income Tax Act of 1902, and its amendments of 1902, 1904, 1905, 1906, and 1907. The first-named, which is the principal Act, was assented to on 1st December, 1902. The Dividend Duty Act of 1890, which imposed a tax on the dividends declared by public companies having their head office or place of business in Queensland, was repealed by the Income Tax Amendment Act of 1904, and in lieu thereof the rates that are shewn in (*c*) below are enforced.

(ii.) *Rates.* The present rates of duty as laid down in the Amendment Acts of 1906 and 1907 are as follows, provided that the total income of a person, not being a company or an absentee, exceeds £200:—

(*a*) On the income derived from personal exertion:—Where the total income does not exceed £500 the tax levied is sixpence for every pound; where it exceeds £500 and does not exceed £1000, sixpence for every pound of the first £500 and sevenpence for every pound over £500; where it exceeds £1000 and does not exceed £1500, sevenpence for every pound of the first £1000 and eightpence for every pound over £1000; and when the income exceeds £1500, eightpence for every pound is payable.

(*b*) On the income derived from the produce of property the rate is ninepence for every pound.

(*c*) On the income of all companies, or of an absentee, that is, a person not domiciled in Australia, one shilling in the pound is charged, provided that in the case of a company whose head office is in Queensland, the income is assessed at not less than the amount of dividends declared during the year, and if the profits remain undistributed amongst the shareholders, only sixpence in the pound is payable upon such undistributed profits. In the case of foreign companies, that is, companies whose head office is outside Queensland, special rules are given in the Act for determining the taxable amount of income.

(iii.) *Exemptions.* Included in the list of exemptions are the following incomes which are free from taxation:—

(*a*) Income of a person, not being a company, which does not exceed £200.

(*b*) Income of the Governor of Queensland, and the revenues of local bodies derived for purposes of local self-government.

(*c*) Incomes of societies and institutions not carrying on business for purposes of profit or gain, and of any registered friendly societies.

(*d*) Incomes and revenues of religious, charitable, and educational institutions of a public character.

(*e*) Incomes arising or accruing from debentures, stock or Treasury bills issued by the Government of Queensland, or derived as dividends from any company which has paid in Queensland income tax on the profits from which such dividends are paid.

(iv.) *Deductions.* When the income of a person, not being a company or an absentee, exceeds £200 per annum, the deduction of £200 is, in the first place, made from the

income, if any, derived from personal exertion. The amount of all premiums not exceeding £50 paid by a taxpayer in respect of life assurance policies, or into any superannuation fund, etc., and all losses and outgoings actually incurred in Queensland by him in production of his income, are also amongst the deductions which are allowed.

5. **South Australia.**—(i.) *Legislation.* Under the Acts given herewith the income tax of South Australia is collected :—

(*a*) Taxation Act 1884, with amendments in 1885, 1887, 1894, 1900, 1902, 1903, 1904, 1905, and 1908.
(*b*) Additional Income Tax Act 1893.
(*c*) Income Tax Continuance Act 1893, with amendments in 1897 and 1898.
(*d*) Increase of Taxes Act 1902.

On the 14th November, 1884, the principal Act, the Taxation Act, was assented to. The rates of duty enforced thereby were superseded in order by the Additional Income Tax Act of 1893, the Amendment Act of 1894, the Increase of Taxes Act of 1902, and the Amendment Act of 1903, the scale enacted by the latter Act still remaining in operation.

(ii.) *Rates.* Under the last-mentioned Act the income of every person of the value of £150 or over is subject to a tax of fourpence half-penny for every pound up to and inclusive of £800, and sevenpence for every pound above that amount if the income be derived from personal exertion ; but if the income consist of the produce of property, the rate is ninepence for every pound up to and inclusive of £800, and thirteenpence half-penny for every pound above the sum of £800. A tax of £5 on every £100 received by foreign shipping companies is imposed under the Act of 1908.

(iii.) *Exemptions.* The following incomes are not subject to the payment of income tax :—

(*a*) Income of every person under the value of £200.
(*b*) Income of municipal corporations and district councils.
(*c*) Income of companies, public bodies and societies, not carrying on business for the purpose of gain to be divided among the shareholders, and the income of all friendly societies.
(*d*) Income derived from land on which land tax is payable, provided that such income does not exceed 5 per cent. of the actual value thereof.
(*e*) Income derived from land and produced by personal exertion where the land does not exceed £1000 in unimproved value.

(iv.) *Deductions.* All expenses, etc., actually incurred by a taxpayer in the production of his income are deducted from the gross amount of his income. If he has been out of South Australia for twelve consecutive months prior to the date on which the tax falls due, or if his net income from all sources exceeds £400, no deduction of any kind is allowed. In the case of an income which exceeds £200, that sum is deducted from the net amount of income derived from the produce of property, but if such income does not amount to £200, the difference is taken from that derived from personal exertion. No deductions are allowed for (*a*) cost of maintenance of a taxpayer and his family or establishment ; (*b*) cost of implements, etc., for purposes of the trade, except renewals for wear and tear ; or (*c*) domestic and private expenses.

6. **Western Australia.**—(i.) *Legislation.* On the 20th December, 1907, the first Income Tax Act of Western Australia received assent under the title of the Land and Income Tax Assessment Act 1907, and on the same day the Land Tax and Income Tax Act was passed, declaring rates for the year ending 30th June, 1908. A similar Land Tax and Income Tax Act is passed each year declaring the rates to be levied for the current financial year.

(ii.) *Rates.* A tax of fourpence in the pound is levied on the annual amount of all incomes exceeding £200 per annum. An additional 50 per cent. is payable on the income of any person who has not been resident in the Commonwealth of Australia during any part of the year preceding the year of assessment, provided that he has not been absent on public service.

(iii.) *Exemptions.* The following are the most important cases of incomes, revenues, and funds exempt from income tax:—

(*a*) Incomes not exceeding £200 per annum.
(*b*) Revenues of municipal corporations, road boards, or other statutory public bodies.
(*c*) Incomes of life assurance companies and of companies or societies not carrying on business for the purpose of profit or gain.
(*d*) Dividends and profits of companies subject to duty under the Dividend Duties Act, and of the Government Savings Bank and Agricultural Bank.
(*e*) Income of the Governor of Western Australia, and of all ecclesiastical, charitable and educational institutions of a public character.
(*f*) Incomes arising or accruing to any person from Western Australian Government debentures, inscribed stock, and Treasury Bills.
(*g*) Income derived from land on which land tax is payable.

(iv.) *Deductions.* Sums expended by a taxpayer for repairs of premises, and expenses, etc., incurred in the production of his income are deducted from the amount on which duty is payable; as are also sums not exceeding £50 in the aggregate which are paid as life assurance premiums or in connection with fidelity guarantees or bonds. The amount paid to a taxpayer's sons and daughters, over the age of sixteen years, employed in his trade or occupation, and a sum representing ten pounds for each child under the age of sixteen residing with, and dependent on him, are also allowed to be deducted from his income.

(v.) *Dividend Duties Act in Western Australia.* This Act was passed in order to impose a tax on the dividends or profits of incorporated companies, and repealed the Company Duties Act passed in 1899. The Dividend Duties Act was passed on 20th December, 1902, and an amendment was assented to on 14th December, 1906. The principal Act provides that within seven days after the declaration of a dividend by a company carrying on business in Western Australia such company shall pay to the Colonial Treasurer a duty equal to one shilling for every pound of the amount or value of such dividend. A company that carries on in the State any insurance or assurance business exclusively (not being a life assurance company is required to pay, on or before 1st March in each year, a sum equal to twenty shillings for every £100 of premiums, and a proportionate sum for every fraction of £100 of such premiums. The rates payable by shipping companies are 5 per cent. of 5 per cent. on all inward or outward traffic, including passenger fares, cent. of the profits on sales of coal or other goods, or of the profits of vessels trading exclusively within the State.

7. **Tasmania.**—(i.) *Legislation.* The Land Tax and Income Tax Act of 1910, which repealed the Income Tax Act of 1902 and its amendment, governs this form of taxation in Tasmania. The tax is levied according to the following scale:—

(ii.) *Rates.* In the case of income derived from personal exertion the scale is as follows:—Under £125, 4d.; between £125 and £150, 4¼d.; between £150 and £250, 4¾d.; between £250 and £350, 5½d.; between £350 and £400, 5¾d.; between 400 and £700, 6d. on first £400 and 7d. on the remainder; between £700 and £900, 6d. on first £400, 7d. on next £200, and 8d. on remainder; between £900 and £1000, 6d. on first £400, 7d. on next £200, 8d. on next £200, and 10d. on remainder; above £1000, 6d. on first £400, 7d. on next £200, 8d. on next £200, 10d. on next £200, 1s. on next £500, 1s. 2d. on next £500, and 1s. 4d. on remainder.

The duty levied by the principal Act is one shilling for every pound sterling of the taxable amount derived from the produce of property, provided that the income is £100 or over per annum. The same scale also applies to the income of any company except those that are specially mentioned below, and to dividends.

(iii.) *Exemptions.* The exemptions from taxation in this State comprise the following:—

(*a*) Income of any person, not being a company, under £100 per annum, provided that such income is not received as a prize in any lottery authorised by law in Tasmania.
(*b*) Revenues of Municipal Corporations, Road Trusts, Town and Marine Boards, Water Trusts and other local government bodies.
(*c*) Incomes of companies, societies, etc., not carrying on business for the purposes of gain to the shareholders, and registered friendly societies.
(*d*) Income of the Governor of Tasmania.
(*e*) Income derived as rent for the use and occupation of land that is subject to land tax.
(*f*) Income of every person arriving in Tasmania for a period of six months after his arrival.

(iv.) *Deductions.* Incomes under £80 are exempt in cases of unmarried persons, or under £100 in cases of married persons, widowers, and widows maintaining at least one child under the age of sixteen years. For incomes between £80 and £400 the following deductions are allowed:—Between £80 and £110, £70; between £110 and £125, £60; between £125 and £150, £50; between £150 and £250, £40; between £250 and £350, £30; between £350 and £400, £20. Also every tax-payer, the taxable amount of whose income is less than £150, can claim a rebate of two shillings and sixpence for every child under the age of sixteen.

v.) *Ability Tax in Tasmania.* The Taxation Act of 1904 provides for the levying of a tax upon persons in proportion to their means or ability. It was assented to on 1st November, 1904, and an amending Act was passed on 30th November, 1906. The assessment of the taxable amount is determined according to the annual value of the property occupied or the amount paid for board and lodging, as the case may be, and varies in the case of property from one penny to sixpence in the pound of annual value, with a minimum of two shillings and sixpence, and in the case of board and lodging from three halfpence to sixpence in the pound on the amount payable annually for board and lodging.

8. **Taxation of Commonwealth Salaries and Allowances.**—On 8th October, 1907, the Commonwealth Salaries Act, passed by the Federal Parliament, received the Governor-General's assent. By this Act it is declared that salaries and allowances paid by the Commonwealth are liable to taxation by the States. The tax is payable in the State in which the officer resides and the salary is earned, and in the case of a member of the Parliament of the Commonwealth, in the State in which he was elected. The only exemption from taxation is the salary of the Governor-General. This Act was the outcome of considerable litigation, brought about by the refusal of persons in receipt of Federal salaries and allowances to pay income tax in respect thereof.

§ 3. Trust Funds.

1. **Nature.**—In addition to the moneys received by the several State Governments as revenue, and paid to the credit of their respective Consolidated Revenue Funds, considerable sums are held by the Governments in trust for various purposes. One of the chief sources of these trust funds is the State Savings Bank, which exists in each State, either as a Government department or under the control of a Board acting under Government supervision or Government guarantee. In most of the States also, sinking funds

for the redemption of public debt are provided, and the moneys accruing thereto are paid to the credit of the appropriate trust funds. A similar course is followed in the case of municipal sinking funds placed in the hands of the Government. In all the States except New South Wales, life assurance companies carrying on business are required to deposit a substantial sum in cash or approved securities with the Government, and these deposits go to further swell the trust funds. Various other deposit accounts, superannuation funds, suspense accounts, etc., find a place in these funds. The trust funds have at various times enabled the several State Treasurers to tide over awkward financial positions, but the propriety of allowing deficits to be frequently liquidated in this manner is worthy of very serious consideration.

2. **Extent of Funds.**—The amount of such funds held by the several State Governments on 30th June, 1910, was as follows:—

TRUST FUNDS ON 30th JUNE, 1910.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£	£	£	£	£	£	£
Amount of trust funds	2,743,155	7,276,179	5,328,729	805,080	7,425,275	506,358	24,084,776

§ 4. Loan Funds.

1. **Nature.**—As early in the history of Australia as 1842 it was deemed expedient to supplement the revenue collections by means of borrowed moneys, the earliest of the loans so raised being obtained by New South Wales for the purpose of assisting immigration, at rates of interest varying from 2¾d. to 5¼d. per £100 per diem, or approximately from 4½ per cent. to 8 per cent. per annum. The principal reason for Australian public borrowing, however, has been the fact that the Governments of the several States have, in addition to ordinary administrative duties, undertaken the performance of many functions which, in other countries, are usually entrusted to local authorities, or left to the initiative of private enterprise. Principal amongst these have been the construction of railways and the control of the railway systems of the several States, while the assumption by the State Governments of responsibilities in connection with improvements to harbours and rivers, and the erection of lighthouses, as well as the construction of works for the purposes of water supply and sewerage, have materially swelled the amounts which it has been considered expedient to obtain by means of loans. The Australian loan expenditure and public debt thus differ very materially from those of most European countries, where such expenditure is very largely incurred for purposes of defence, or absorbed in the prosecution of war. The debt of Australia, on the other hand, consists in the main of moneys raised and expended with the object of assisting the development of the resources of the Commonwealth, and is, to a very large extent, represented by tangible assets such as railways, tramways, waterworks, etc.

2. **Loan Expenditure, 1909-10.**—During the year ended 30th June, 1910, the actual expenditure of the Australian States from loan funds amounted to £8,384,542, New South Wales with a total of £3,246,640 being the principal contributor to this amount, while Queensland, whose expenditure amounted to £1,486,216, ranked second. The chief item of expenditure for the year was that of railways and tramways, which represented a total of £5,403,756, water supply and sewerage works to the amount of £1,204,095; the expenditure on harbours, rivers, etc., and roads and bridges totalling £544,173, and land purchases for settlement, £486,501, were the most important of the remaining items. Details for the year for each State are given in the following table:—

AUSTRALIAN LOAN EXPENDITURE, 1909-10.

Heads of Expenditure.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Railways and tramways	2,471,285	657,666	1,262,776	382,813	529,054	100,162	5,403,756
Water supply and sewerage ...	578,110	286,823	1,679	242,562	94,921	...	1,204,095
Harbours, rivers, etc.	158,733	...	...	93,948	113,251	154,082	544,173
Roads and bridges	*9	50	...	...	24,118		
Public buildings	20,490	...	18,268	28,996	75,893	19,615	163,262
Development of mines, etc. ...	...	35,906	1,491	...	35,677	...	73,074
Advances to settlers	...	10,734	...	6,867	...	...	17,601
Land purchases for settlement ...	...	198,946	...	173,779	...	113,776	486,501
Loans to local bodies	...	...	185,432	...	...	47,469	232,901
Rabbit-proof fences	23,246	...	16,570	6,900	3,200	...	49,916
Other public works and purposes ...	*5,215	19,380	...	42,217	152,881	...	209,263
Total	3,246,640	1,209,505	1,486,216	978,082	1,028,995	435,104	8,384,542

* Credit.

3. **Aggregate Loan Expenditure.**—The total loan expenditure of the Australian States from the initiation of the borrowing system to the 30th June, 1910, has amounted to no less a sum than £249,305,568. The manner in which this sum has been spent in the several States is furnished in the following table :—

AGGREGATE AUSTRALIAN LOAN EXPENDITURE to 30th JUNE, 1910.

Heads of Expenditure.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas	All States.
	£	£	£	£	£	£	£
Railways and tramways ...	55,959,582	40,346,934	25,766,403	14,578,841	11,331,008	4,351,776	152,334,544
Telegraphs and telephones ...	1,761,845	...	996,587	991,773	269,398	142,410	4,162,013
Water supply and sewerage ...	13,748,223	10,066,012	359,708	5,884,180	3,321,356	...	33,379,479
Harbours, rivers, etc. ...	11,130,204	611,059	2,447,862	2,097,514	2,546,480	3704,778	27,098,752
Roads and bridges	1,797,115	176,293	923,656	1,464,736	199,055		
Defence	1,457,536	149,323	363,084	291,615	...	128,224	2,389,782
Public buildings	4,373,568	1,912,029	1,464,940	1,114,174	458,882	918,602	10,242,195
Immigration	194,430	...	2,763,083	...	28,085	235,000	3,220,598
Development of mines, etc. ...	...	167,571	...	...	1,212,962	...	1,380,533
Advances to settlers	683,308	170,819	...	93,976	55,354	...	1,003,457
Land purchases for settlement	139,000	1,967,434	...	1,249,423	300,000	113,776	3,769,633
Loans to local bodies ...	...	...	2,774,120	...	...	651,254	3,425,374
Rabbit-proof fences	53,057	...	...	367,601	312,314	...	732,972
Other pub. works and purposes	49,855	1,550,819	1,572,233	2,239,660	476,298	277,371	6,166,236
Total	91,347,723	57,118,293 *	39,431,676	30,373,493	20,511,192	10,523,191	249,305,568

* Exclusive of £1,866,168 for "Loans in aid of Revenue."

It must be noted that the figures furnished in this table represent the amounts actually spent, and consequently differ somewhat from those given later in the statements relating to the public debt, which represent amount of loans still unpaid at a given date. The loan expenditure statement includes all such expenditure, whether the loans by means of which the necessary funds were raised have been repaid or are still in existence. On the other hand, in the public debt statement loans repaid are excluded, but in the case of loans still outstanding each is shewn according to the amount repayable at maturity, not according to the amount originally available for expenditure.

4. **Relative Importance of Loan Items.**—The relative importance of the different items of loan expenditure given in the foregoing table varies considerably in the several States, but in each instance the expenditure on railways and tramways predominates, the percentage of this item on total expenditure ranging between the limits of 41 per cent. in the case of Tasmania and 71 per cent. in that of Victoria. The following table gives for the several States the percentage of each item on the total loan expenditure of that State to 30th June, 1910 :—

PERCENTAGE OF EACH ITEM ON TOTAL LOAN EXPENDITURE OF THE STATES to 30th JUNE, 1910.

Heads of Expenditure.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	%	%	%	%	%	%	%
Railways and tramways ...	61.26	70.64	65.34	47.99	55.24	41.35	61.10
Telegraphs and telephones ...	1.93	...	2.53	3.26	1.32	1.35	1.67
Water supply and sewerage ...	15.05	17.62	0.91	19.37	16.19	...	13.43
Harbours, rivers, etc. ...	12.18	1.07	6.21	6.90	12.42	35.21	10.86
Roads and bridges	1.97	0.31	2.34	4.82	0.97		
Defence	1.60	0.26	0.92	0.96	...	1.22	0.96
Public buildings	4.79	3.35	3.72	3.67	2.24	8.73	4.10
Immigration	0.21	...	7.01	...	0.14	2.23	1.29
Development of mines, etc. ...	...	0.29	...	...	5.91	...	0.55
Advances to settlers	0.75	0.30	...	0.31	0.27	...	0.40
Land purchases for settlement	0.15	3.44	...	4.12	1.46	1.08	1.51
Loans to local bodies ...	...	...	7.04	...	...	6.19	1.37
Rabbit-proof fences	0.06	...	...	1.21	1.52	...	0.29
Other public works & purposes	0.05	2.72	3.98	7.39	2.32	2.64	2.47
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00

5. **Loan Expenditure in Successive Years.**—In the following table are given particulars relative to the loan expenditure of the several States during each of the years 1901-2 to 1909-10 :—

AUSTRALIAN LOAN EXPENDITURE, 1901-2 to 1909-10.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£	£	£	£	£	£	£
1901-2 ...	4,939,241	910,833	1,161,689	566,079	1,545,823	341,994	9,465,659
1902-3 ...	4,713,386	756,404	1,022,405	465,554	1,665,901	238,631	8,862,281
1903-4 ...	2,288,742	447,244	603,805	415,728	710,629	167,123	4,633,271
1904-5 ...	1,571,257	373,191	225,466	449,214	654,353	150,994	3,424,475
1905-6 ...	1,367,022	932,966	297,624	449,930	372,442	136,971	3,556,955
1906-7 ...	1,058,553	595,658	683,570	499,132	900,964	156,945	3,894,822
1907-8 ...	1,965,329	783,538	1,033,676	495,928	733,745	224,954	5,237,170
1908-9 ...	2,906,507	1,098,360	1,247,821	832,114	1,012,452	334,200	7,431,454
1909-10 ...	3,246,640	1,209,505	1,486,216	978,082	1,028,995	435,104	8,384,542

Throughout the nine years under review the loan expenditure of New South Wales exceeded that of any other of the States, and for the years 1901-2 and 1902-3 represented more than half of the aggregate loan expenditure of Australia. The amount so spent in New South Wales, however, continuously declined from £4,939,241 in 1901-2 to £1,058,553 in 1906-7, but rose again in 1907-8 to £1,965,329, in 1908-9 to £2,906,507, and in 1909-10 to £3,246,640. In South Australia the annual loan expenditure during the six years, 1902-3 to 1907-8, varied but little from £450,000, but in 1908-9 an increase to £832,114 took place, and in 1909-10 to £978,082. In Tasmania the loan expenditure continuously declined from £341,994 in 1901-2 to £136,971 in 1905-6, but advanced again in each of the years 1906-7, 1907-8, 1908-9, and 1909-10, reaching £435,104 in the last-mentioned year. In the three remaining States marked fluctuations have been in evidence; thus, Victoria had a minimum loan expenditure for the period in 1904-5 and a maximum in 1909-10, the figures being, respectively, £373,191 and £1,209,505 ; Queensland had a minimum of £225,466 in 1904-5 and a maximum of £1,486,216 in 1909-10 ; while Western Australia had a minimum of £372,442 in 1905-6 and a maximum of

£1,665,901 in 1902-3. The large loan expenditure of New South Wales in 1901-2, 1902-3, 1908-9, and 1909-10 was incurred chiefly in connection with railway construction and the resumption of the foreshores and adjoining properties of Darling Harbour. In Victoria the large expenditure of 1901-2 was in great part due to railway construction, that of 1905-6 resulted in large measure from the purchase of lands for closer settlement, while the construction of railways, and water supply and sewerage works was mainly responsible for the high expenditure of 1908-9 and 1909-10. In the case of the large loan expenditure of Queensland in 1901-2 and 1902-3, as well as that of 1906-7, 1907-8, 1908-9, and 1909-10, railway construction was the principal contributing item. In Western Australia the heavy loan expenditure of 1901-2, 1902-3, and 1908-9 was principally in connection with railway construction and water supply.

6. **Loan Expenditure per Head.**—The loan expenditure per head of population varies materially in the different States and in different years, reaching its highest point for the nine years under review in Western Australia in 1901-2 with £7 19s. 3d. per head, and its lowest in Victoria in 1904-5 with 6s. 2d. per head. Particulars concerning the loan expenditure per head for the nine years 1901-2 to 1909-10 are given hereunder:—

LOAN EXPENDITURE PER HEAD, 1901-2 to 1909-10.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1901-2 ...	3 11 10	0 15 1	2 5 11	1 10 11	7 19 3	1 19 10	2 9 6
1902-3 ...	3 7 2	0 12 6	2 0 0	1 5 5	7 16 2	1 7 7	2 5 8
1903-4 ...	1 12 1	0 7 5	1 3 5	1 2 7	3 2 8	0 18 11	1 3 7
1904-5 ...	1 1 7	0 6 2	0 8 8	1 4 1	2 14 0	0 16 9	0 17 2
1905-6 ...	0 18 4	0 15 4	0 11 3	1 3 10	1 9 3	0 15 2	0 17 7
1906-7 ...	0 13 10	0 9 8	1 5 7	1 6 0	3 8 10	0 17 5	0 18 11
1907-8 ...	1 5 1	0 12 7	1 18 2	1 5 3	2 16 1	1 4 5	1 4 11
1908-9 ...	1 16 6	0 17 3	2 5 2	2 0 10	3 15 10	1 16 0	1 14 9
1909-10 ...	2 0 0	0 18 7	2 11 11	2 7 0	3 15 3	2 6 7	1 18 4

§ 5. Public Debt.

1. **The Initiation of Public Borrowing.**—The earliest of the loans raised in Australia for Government purposes was that obtained by New South Wales in 1842. This and nine other loans raised prior to 1855 were all procured locally. In the last-mentioned year Australia's first appearance on the London market occurred, the occasion being the placing of the first instalment of the New South Wales 5 per cent. loan for £683,300. Victoria first appeared as a borrower in 1854, and made its first appearance on the London market in 1859. In the remaining States the first public loans were raised in the following years:—Queensland 1861, South Australia 1854, Western Australia 1845, and Tasmania 1867.

2. **Nature of Securities.**—All the earlier loans raised by the Australian States were obtained by the issue of debentures, some of which were repayable at fixed dates, and others by annual or other periodical drawings. In more recent years, however, the issue of debentures has given place to a great extent to that of inscribed stock, the inscription in the case of local issues being carried out by the State Treasuries, and in the cases of loans floated in London being mainly performed by the Bank of England and the London and Westminster Bank. The issue of debentures has not, however, been entirely discontinued, for within the last seven years debentures to the amount of upwards of £2,000,000 were placed on the market by the Government of New South Wales. In other States also, recent issues of debentures have taken place, the occasions usually being those in which the term of the loan is less than that ordinarily attaching to issues of

inscribed stock. Another form of security is that variously known as the Treasury bill or Treasury bond. This is usually neither more nor less than a short term debenture having a currency in most instances of from three to five years. These are issued in certain cases to liquidate deficiencies in revenue, and in others to obtain moneys for the purpose of carrying on public works at a time when it is deemed inexpedient to place a permanent loan on the market. The amount of the public debt of the several States held in each of these forms of security is furnished in the table hereunder :—

PUBLIC DEBT OF AUSTRALIAN STATES, 30th JUNE, 1910.

State.	Debentures.	Inscribed Stock.	Treasury Bills.		Total Amount Outstanding.
			For Public Works and Services.	In aid of Revenue.	
	£	£	£	£	£
New South Wales ...	3,780,950	86,584,808	1,500,000	659,337	92,525,095
Victoria	6,018,249	43,201,616	6,281,860	75,000	55,576,725
Queensland	13,980,580	29,165,487	...	1,130,000	44,276,067
South Australia ...	2,866,400	24,685,620	3,835,850	...	*31,387,870
Western Australia ...	405,500	22,164,953	717,000	...	23,287,453
Tasmania	2,714,250	7,797,410	58,793	...	10,570,453
Total	29,765,929	213,599,894	12,393,503	1,864,337	257,623,663

* Including Northern Territory debt, £2,662,678.

The manner in which the amount of public debt of the Australian States held under these various forms of security has grown during the past nine years will be seen from the following table :—

PUBLIC DEBT OF AUSTRALIAN STATES, 30th JUNE, 1901 to 1910.

Date.	Debentures.	Inscribed Stock.	Treasury Bills.		Total Amount Outstanding.
			For Public Works and Services.	In aid of Revenue.	
	£	£	£	£	£
30th June, 1901 ...	44,060,320	151,140,371	5,914,000	2,403,584	203,518,275
„ 1902 ...	44,191,825	161,673,758	4,006,500	4,383,126	214,255,209
„ 1903 ...	43,639,525	168,388,889	6,046,775	4,796,576	222,871,765
„ 1904 ...	37,741,025	172,796,361	12,493,650	4,716,576	227,747,612
„ 1905 ...	39,158,744	175,047,336	12,045,100	4,487,491	230,738,671
„ 1906 ...	39,587,224	181,279,045	12,194,464	5,367,087	238,427,820
„ 1907 ...	38,061,799	184,157,771	13,571,985	4,358,172	240,149,727
„ 1908 ...	37,665,279	190,377,823	12,131,871	3,660,516	243,835,489
„ 1909 ...	31,218,229	203,640,152	13,620,561	3,294,591	251,773,533
„ 1910 ...	29,765,929	213,599,894	12,393,503	1,864,337	257,623,663

During the nine years between 30th June, 1901, and 30th June, 1910, the public debt of the States increased by £54,105,388, or at the rate of about £6,000,000 per annum. The amount of debentures comprised in the total debt diminished by £14,294,391 during the period, while the amount held as inscribed stock increased by £62,459,523, and as Treasury bills by £5,940,256.

3. **Increase in Indebtedness of the Several States.**—The table given hereunder furnishes particulars of the increase which has taken place during the past nine years in the public debts of the several States :—

PUBLIC DEBT OF AUSTRALIAN STATES, 30th JUNE, 1901 to 1910.

Date.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£	£	£	£	£	£	£
30th June, 1901 ...	67,361,246	50,071,275	38,416,514	26,448,805	12,709,430	*8,511,005	203,518,275
„ 1902 ...	71,592,485	50,933,957	40,418,177	27,272,545	14,942,310	*9,095,735	214,255,209
„ 1903 ...	77,692,987	51,447,900	41,031,247	27,843,370	15,627,298	*9,228,963	222,871,765
„ 1904 ...	80,033,581	51,819,962	41,773,297	28,593,645	16,090,288	9,436,839	227,747,612
„ 1905 ...	82,321,998	51,763,767	41,764,467	28,773,695	16,642 773	9,471,971	230,738,671
„ 1906 ...	85,641,734	53,079,800	41,764,467	30,082,635	18,058,553	9,800,631	238,427,820
„ 1907 ...	85,607,832	53,104,989	41,764,467	30,526,718	19,222,638	9,923,083	240,149,727
„ 1908 ...	87,635,826	53,305,487	42,264,467	29,985,858	20,493,618	10,150,233	243,835,489
„ 1909 ...	90,307,419	54,667,197	44,276,067	30,436,183	21,951,753	10,134,914	251,773,533
„ 1910 ...	92,525,095	55,576,725	44,276,067	31,387,870	23,287,453	10,570,453	257,623,663

* On 31st December, 1900, 1901, and 1902 respectively.

The States in which the greatest increase in indebtedness was experienced during the period are New South Wales and Western Australia, the former advancing by £25,163,849, the latter by £10,578,023. On the other hand the public debt of Tasmania increased by little more than £2,000,000.

4. **Indebtedness per Head.**—The indebtedness per head of population varies considerably in the several States, being highest in the case of Western Australia, and lowest in that of Victoria. Details for the period from 30th June, 1901, to 30th June, 1910, are as follows :—

AUSTRALIAN INDEBTEDNESS PER HEAD, 30th JUNE, 1901 to 1910.

Date.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
30th June, 1901 ...	49 9 3	41 11 8	76 9 11	73 3 6	67 5 0	*49 4 6	53 13 11
„ 1902 ...	51 9 4	42 1 9	79 3 5	74 19 8	72 3 5	*52 3 2	55 11 6
„ 1903 ...	54 17 7	42 11 9	80 0 5	76 5 7	70 7 11	*52 0 2	57 2 9
„ 1904 ...	55 10 6	42 19 4	80 6 10	77 9 1	67 12 1	53 0 9	57 12 5
„ 1905 ...	55 17 0	42 14 11	79 6 11	76 17 7	66 4 11	53 4 6	57 9 5
„ 1906 ...	56 14 4	43 8 1	78 4 3	79 3 10	69 5 0	55 2 9	58 7 3
„ 1907 ...	55 4 6	42 17 1	77 6 6	79 6 2	73 5 6	55 16 4	57 16 1
„ 1908 ...	55 10 6	42 9 0	76 11 6	75 5 10	77 3 5	56 5 4	57 12 10
„ 1909 ...	56 5 7	42 12 1	78 0 3	74 4 7	80 18 10	55 6 6	58 5 9
„ 1910 ...	56 6 1	42 9 4	75 1 11	75 3 8	83 7 2	57 12 10	58 5 2

* On 31st December, 1900, 1901, and 1902 respectively.

5. **Flotation of Loans.**—The early loans of the Australian States, usually for comparatively small amounts, were raised locally, but, with the increasing demand for loan funds and the more favourable terms offering in the London than in the local money market, the practice of placing Australian public loans in London came into vogue, and for many years local flotations, except for short terms or small amounts, were comparatively infrequent. In more recent years, however, the accumulating stocks of money in Australia seeking investment have led to the placing of various redemption and other loans locally, with very satisfactory results. In the following table are given particulars of loans of the several States outstanding on 30th June, 1910, which had been floated in London and Australia respectively :—

PUBLIC DEBT OF AUSTRALIAN STATES, 30th JUNE, 1910.

State.	Floated in London		Floated in Australia.		Total Public Debt.
	Amount.	Percentage on Total Debt.	Amount.	Percentage on Total Debt.	
	£	%	£	%	£
New South Wales	67,154,805	72.58	25,370,290	27.42	92,525,095
Victoria... ...	39,012,436	70.20	16,564,289	29.80	55,576,725
Queensland ...	37,409,347	87.61	6,866,720	12.39	44,276,067
South Australia ...	19,817,388	63.14	11,570,482	36.86	31,387,870*
Western Australia	20,348,453	87.38	2,939,000	12.62	23,287,453
Tasmania ...	8,230,050	77.86	2,340,403	22.14	10,570,453
Total ...	191,972,479	74.98	65,651,184	25.02	257,623,663

* Including Northern Territory debt, £2,662,678.

The following table, giving corresponding particulars for the aggregate indebtedness of the Australian States at the end of each of the financial years 1900-1 to 1909-10, furnishes an indication of the rapidity with which the local holdings of Australian securities have grown in recent years:—

PUBLIC DEBT OF AUSTRALIAN STATES, 30th JUNE, 1901 to 1910.

Date.	Floated in London.		Floated in Australia.		Total Public Debt.
	Amount.	Percentage on Total Debt.	Amount.	Percentage on Total Debt.	
	£	%	£	%	£
30th June, 1901 ...	174,810,377	85.89	28,707,898	14.11	203,518,275
„ 1902 ...	181,493,170	84.71	32,762,039	15.29	214,255,209
„ 1903 ...	186,507,721	83.68	36,364,044	16.32	222,871,765
„ 1904 ...	188,165,495	82.62	39,582,117	17.38	227,747,612
„ 1905 ...	188,918,820	81.88	41,819,851	18.12	230,738,671
„ 1906 ...	190,887,001	80.06	47,540,819	19.94	238,427,820
„ 1907 ...	185,579,389	77.28	54,570,338	22.72	240,149,727
„ 1908 ...	183,321,256	75.18	60,514,233	24.82	243,835,489
„ 1909 ...	189,410,036	75.23	62,363,497	24.77	251,773,533
„ 1910 ...	191,972,479	74.52	65,651,184	25.48	257,623,663

It will be seen that in the course of nine years the London indebtedness of the States has increased by £17,162,102, while the local indebtedness has increased by no less than £36,943,286. In other words, whilst on 30th June, 1901, the Australian portion of the debt represented only about 14 per cent. of the total, the proportion had on 30th June, 1910, grown to 25 per cent.

6. **Rates of Interest.**—As mentioned above, the rate of interest paid in connection with the earliest Australian public loan was fivepence farthing per £100 per diem or, approximately, 8 per cent. per annum. At the present time the three principal rates of interest payable on Australian public securities are 4 per cent., 3½ per cent., and 3 per cent., most of the loans raised during recent years bearing interest at the rate of 3½ per cent. The average rate payable on the aggregate indebtedness of the Australian States is slightly less than 3⅝ per cent. For the separate States the average rate payable varies considerably, being lowest in the case of Western Australia and highest in that of Queensland; the difference between these two average rates is ¼ per cent. In the table given hereunder particulars are furnished of the rates of interest payable on the public debt of the several States of the Commonwealth on 30th June, 1910:—

RATES OF INTEREST PAYABLE ON AUSTRALIAN PUBLIC DEBT, 30th JUNE, 1910.

Rate of Interest.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Total.
%	£	£	£	£	£	£	£
6	...	...	...	209,500	...	...	209,500
5	2,700	...	...	240,000	...	...	242,700
4½	...	...	...	...	52,800	...	52,800
4	17,541,139	17,153,795	22,514,300	11,154,450	4,898,508	3,721,050	76,983,242
3⅞	4,920,515	220,000	...	5,594,647	...	161,595	10,896,757
3½	52,478,385	27,890,521	16,272,384	8,226,928	10,980,145	6,139,569	121,987,932
3¼	...	75,000	...	...	...	...	75,000
3	17,569,519	10,236,409	5,489,383	5,962,345	7,356,000	548,239	47,161,895
Not bearing interest ...	12,837	1,000	...	...	...	...	13,837
Total public debt	92,525,095	55,576,725	44,276,067	31,387,870*	23,287,453	10,570,453	257,623,663
Average rate per cent. payable	£ s. d. 3 10 3	£ s. d. 3 11 3	£ s. d. 3 14 0	£ s. d. 3 13 1	£ s. d. 3 9 0	£ s. d. 3 13 1	£ s. d. 3 11 5

* Including Northern Territory debt, £2,662,678.

The rapid increase which has taken place in recent years in the amount of Australian Government securities, bearing interest at 3½ per cent., is clearly shewn in the table hereunder, which gives particulars concerning the aggregate amount of the Australian indebtedness, at the several rates of interest, on 30th June in each of the years 1905 to 1910 :—

RATES OF INTEREST PAYABLE ON AUSTRALIAN PUBLIC DEBT, 30th JUNE, 1905 to 1910.

Rate of Interest.	30th June, 1905.	30th June, 1906.	30th June, 1907.	30th June, 1908.	30th June, 1909.	30th June, 1910.
%	£	£	£	£	£	£
6	383,900	346,400	308,900	297,900	269,800	209,500
5	242,700	242,700	242,700	242,700	242,700	242,700
4½	66,700	64,200	61,500	58,700	55,900	52,800
4	103,944,877	102,577,852	94,972,288	87,392,377	80,403,472	76,983,242
3¾	1,825,000	2,045,000	2,513,500	3,131,760	5,218,435	10,896,757
3½	74,794,616	84,048,885	93,522,109	104,601,533	117,970,370	121,987,932
3¼	289,100	200,300	174,718	149,718	124,718	75,000
3	49,181,528	48,890,833	48,292,112	47,948,051	47,472,888	47,161,895
Not bearing interest	10,250	11,650	61,900	12,750	15,250	13,837
Total public debt	230,738,671	238,427,820	240,149,727	243,835,489	251,773,533	257,623,663
Average rate % payable	£3 12 6	£3 12 5	£3 12 1	£3 11 9	£3 11 6	£3 11 5

During the five years between 30th June, 1905, and 30th June, 1910, the Australian Government 4 per cent. securities decreased by £26,961,635, and the 3 per cent. securities by £2,019,633, while the 3½ per cents. advanced by £47,193,316, and the 3¾ per cents. by £9,071,757. During the same period the total amount at all other rates than the four here mentioned declined by about 40 per cent. from £992,650 to £593,837.

7. **Interest Payable per Head.**—The relative burden of the debts of the several States in respect of interest payments will be seen from the following table, which gives for the 30th June, 1910, the amount of interest payable annually on the debt of each State as outstanding at that date, and also the corresponding amount per head of population :—

ANNUAL INTEREST PAYABLE ON PUBLIC DEBT OUTSTANDING AT 30th JUNE, 1910.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Total annual interest payable ...	3,117,472	1,957,710	1,635,270	1,094,358	759,443	377,217	8,941,470
Annual interest payable per head	£1 17 11	£1 9 11	£2 15 6	£2 12 5	£2 14 4	£2 1 2	£2 0 5

8. **Dates of Maturity.**—An important point in which the securities of the Australian Governments, whether in the form of inscribed stock, debentures, or Treasury bills, differ from such a well-known form of security as British consols, consists in the fact that whereas the latter are interminable, the Australian Government securities have in almost all cases a fixed date for repayment, the exceptions being the State of New South Wales, which includes in its public debt an amount representing interminable securities totalling on 30th June, 1910, £532,889; the State of Victoria, which includes £4,080,997 payable at the option of the Government at any time after 29th September, 1917; and the State of South Australia, which includes £5,122,845, similarly repayable after 1st January, 1916. The terms of the loans raised by the issue of debentures and inscribed stock have varied considerably in the different States, ranging between fifteen and fifty years, while loans obtained by means of Treasury bills have usually been for such short terms as from six months to five years. In the case of the majority

of the loans the arrival of the date of maturity means that arrangements for renewal are necessary in respect of the greater portion of the loan, as it is only in exceptional cases that due provision for redemption has been made. The condition of the money market at the date of maturity has an important bearing on the success or otherwise with which the renewal arrangements can be effected, and consequently, in order to obviate the necessity for making an application to the market at an unfavourable time, several of the States have now adopted the practice of specifying a period of from ten to twenty years prior to the date of maturity within which the Government, on giving twelve, or in some cases six, months' notice, has the option of redeeming the loan. By such means advantage may be taken by the Government during the period of opportunities that may offer for favourable renewals. Particulars concerning the due dates of the loans of the several States outstanding on 30th June, 1910, are given in the following table:—

DUE DATES OF THE PUBLIC DEBTS OF THE SEVERAL STATES OF THE COMMONWEALTH OUTSTANDING ON 30th JUNE, 1910.

Due Dates.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
Overdue	12,837	1,000	...	...	...	...	13,837
1910	2,084,200	12,500	...	315,550	1,266,305	157,679	3,836,234
1911	1,000,000	50,000	...	601,675	6,000	1,362,072	3,019,747
1912	9,884,508	50,000	530,000	623,275	61,000	254,970	11,403,753
1913	...	4,050,000	2,066,500	1,038,025	650,000	936,313	8,740,838
1914	...	25,000	...	860,300	...	977,096	1,862,396
1915	3,881,081	525,000	11,728,800	261,975	85,840	87,823	16,570,519
1916	...	2,792,000	...	2,205,648	...	130,397	5,128,045
1917	...	3,039,860	...	1,864,940	250,000	10,760	5,165,560
1918	12,826,200	25,000	...	1,538,565	...	58,488	14,448,253
1919	3,540,565	4,155,650	...	347,800	...	2,400	8,046,415
1920	...	6,012,500	...	432,489	...	301,784	6,746,773
1921	4,872,843	...	...	154,825	...	303,169	5,330,837
1922	...	63,000	...	506,238	...	8,252	577,490
1923	1,874,015	7,746,795	...	260,725	605,325	...	10,486,860
1924	16,698,065	...	12,973,834	2,362,085	664,530	...	32,698,514
1925	222,255	...	...	11,040	...	5,050	238,345
1926	...	7,210,000	...	1,021,565	...	67,600	8,299,165
1927	...	202,000	...	643,645	2,500,000	...	3,345,645
1928	...	897,500	...	662,080	...	...	1,559,580
1929	...	277,500	...	203,000	...	300,000	780,500
1930	...	1,154,850	3,704,800	200,250	...	100	5,060,000
1931	...	...	...	...	1,876,000	...	1,876,000
1932	...	459,300	...	...	...	...	459,300
1933	9,686,300	...	...	250,800	...	...	9,937,100
1934	...	...	...	544,100	996,053	...	1,540,153
1935	12,500,000	...	...	1,561,550	8,280,000	...	22,341,550
1936	...	300,000	...	4,944,750	1,100,000	...	6,344,750
1937	...	...	...	13,920	...	...	13,920
1938	...	...	...	101,160	...	...	101,160
1939	...	...	...	2,727,050	...	...	2,727,050
1940	...	248,900	...	6,000	...	5,606,500	5,861,400
1941	...	315,380	...	...	...	...	315,380
1942	...	494,100	...	...	...	...	494,100
1943	...	3,600	...	...	...	...	3,600
1944	...	400	...	...	...	...	400
1945	...	...	6,327,240	...	...	...	6,327,240
1947	...	...	4,498,693	...	2,000,000	...	6,498,693
1949	...	11,260,019	...	...	...	...	11,260,019
1950	12,250,000	...	946,600	...	...	...	13,196,600
1951	...	...	999,600	...	...	...	999,600
1953	...	...	500,000	...	...	...	500,000
1954	...	123,874	...	...	...	...	123,874
1955	...	...	...	...	2,787,000	...	2,787,000
Interminable ...	532,889	...	...	...	...	...	532,889
Annual drawings ...	659,337	...	...	...	159,400	...	818,737
Indefinite... ...	...	4,080,997	...	5,122,845	...	...	9,203,842
Total ...	92,525,095	55,576,725	44,276,067	31,387,870	23,287,453	10,570,453	257,623,663

In the above table those loans, in the case of which the Government has the option of redemption during a specified period, have been in each instance classified according to the latest date of maturity. During the fifteen years from 1910 to 1924 inclusive, the amount falling due represents a total of no less than £146,624,118, or nearly 57 per cent. of the total outstanding at 30th June, 1910.

9. **Sinking Funds.**—The practice of providing for the ultimate extinction of the public debt by means of the creation of sinking funds, receiving definite annual contributions from Consolidated Revenue, and accumulating at compound interest, has only been consistently adopted in the case of Western Australia. This State has established, in connection with each of its loans, sinking funds varying from 1 per cent. to 3 per cent. per annum of the nominal amount of the loan. These funds are placed in the hands of trustees in London, by whom they are invested in the securities of the British, Indian, and Colonial Governments, and applied from time to time in the redemption of loans falling due. In the remaining States the sinking fund provision made is varied, consisting in certain instances of the revenues from specified sources, in others of the Consolidated Revenue Fund surplus, and in others again of fixed annual amounts. In the following table are given particulars of the sinking funds of each State, and the net indebtedness of each after allowance for sinking fund has been made, the details given being those for 30th June, 1910 :—

STATES SINKING FUNDS AND NET INDEBTEDNESS, 30th JUNE, 1910.

State	Gross Indebtedness.	Sinking Fund.	Net Indebtedness.	Net Indebtedness per head.
	£	£	£	£ s. d.
New South Wales ...	92,525,095	331,308	92,193,787	56 2 1
Victoria	55,576,725	851,085	54,725,640	41 16 4
Queensland	44,276,067	...	44,276,067	75 1 11
South Australia ...	31,387,870*	650,100	30,737,770	73 12 2
Western Australia ...	23,287,453	2,569,707	20,717,746	74 3 3
Tasmania	10,570,453	374,806	10,195,647	55 11 11
Total... ...	257,623,663	4,777,006	252,846,657	57 3 7

* Including Northern Territory debt, £2,662,678

10. **London Prices of Australian Stocks.**—In examining the prices quoted for Australian Government securities, particularly if the examination is made with the object of comparing the prices at a given time of different stocks, or the prices at different times of the same stock, several points in connection with the securities need to be kept in view; the principal of these are—(*a*) the rate of interest payable, (*b*) the date of maturity, and (*c*) the date at which interest is payable.

In the following table particulars are given of the London prices of some of the principal 3½ per cent. stocks of the several States during 1910. The quotations given are the middle prices, taken from the *Economist*, and are for the last Friday in each quarter :—

LONDON QUOTATIONS FOR AUSTRALIAN 3½ PER CENT. STOCKS DURING 1910.

State.	Rate of Interest Payable.	Year of Maturity.	Months in which Interest is Payable.	London Prices (cum dividend) on			
				26th Mar. 1910.	25th June 1910.	24th Sept. 1910.	31st Dec. 1910.
	%						
New South Wales	3½	1918	Mar.—Sept.	98½	99½	98	98
Victoria ...	3½	1923	Jan.—July	98½	98	98	96½
Queensland ...	3½	1924-30	Jan.—July	98½	97½	98	96
South Australia ...	3½	1939	Jan.—July	98	98	98½	96½
West. Australia ...	3½	1915-35	May—Nov.	99	97	97½	96½
Tasmania ...	3½	1920-40	Jan.—July	97½	98½	99	97½

Throughout the year the prices of Australian 3½ per cent. stocks on the London market were, on the average, about the same as those for the corresponding periods of the preceding year.

SECTION XXI.

PRIVATE FINANCE.

§ 1. Currency.

1. **The Three Australian Mints.**—Soon after the discovery of gold in Australia steps were taken for the establishment of a branch of the Royal Mint in Sydney. The formal opening took place on the 14th May, 1855, the mint being located in the southern part of the building once known as the "rum hospital," where it has remained up to the present. It is now proposed, however, to erect more suitable buildings for its accommodation in some other part of the city. The Melbourne branch of the Royal Mint was opened on the 12th June, 1872, and the Perth branch on the 20th June, 1899. The States of New South Wales, Victoria, and Western Australia provide an annual endowment, in return for which the mint receipts are paid into the respective State Treasuries, and it may be said that, apart from expenditure on buildings, new machinery, etc., the amounts paid into the Treasuries fairly balance the mint annuities.

2. **Receipts and Issues in 1909.**—(i.) *Assay of Deposits Received.* The number of deposits received during 1909 at the Sydney Mint was 1701, of a gross weight of 628,871 ozs.; at the Melbourne Mint, 4462, of a gross weight of 904,694 ozs.; and at the Perth Mint, 6509, of a gross weight of 1,458,270 ozs. The average composition of these deposits in Sydney was, gold 859.2, silver 95.2, base 45.6 in every 1000 parts; Melbourne, gold 921.0, silver 39.0, base 40.0 in every 1000 parts; and Perth, gold 830.9, silver 107.0, base 62.1 in every 1000 parts. As many parcels have, however, undergone some sort of refining process before being received at the mint, the average assay for gold shews higher in these figures than for gold as it naturally occurs.

(ii.) *Receipts.* Practically all the gold coined at the Australian mints is the produce of either the Commonwealth or of the Dominion of New Zealand. The Sydney Mint, however, receives small parcels from Papua, and some gold produced in Rhodesia was, in 1909, sent to Perth for coinage. The following table shews the origin of the gold received at the three mints during 1909:—

ORIGIN OF GOLD RECEIVED AT MINTS DURING 1909.

Origin of Gold.	Sydney Mint.	Melbourne Mint.	Perth Mint.
	ozs.	ozs.	ozs.
New South Wales	152,711.56	2,991.68	...
Victoria	1,440.51	704,583.91	...
Queensland...	328,914.91	1,886.24	...
South Australia	1,653.04	8,881.94	247
Western Australia	568.55	21,181.47	1,457,387
Tasmania	481.04	25,852.43	...
New Zealand	126,454.83	95,545.98	...
Other countries, origin not stated, and light gold coin	16,646.59	43,770.42	636
Total	628,871.03	904,694.07	1,458,270

It will be seen that practically all gold produced in New South Wales and Queensland, nearly three-fifths of that produced in New Zealand, and about one-sixth of the South Australian produce, found its way to the Sydney Mint, while the Melbourne Mint received all Victorian and about five-sixths of the South Australian gold, together with all of the Tasmanian and over two-fifths of the New Zealand production, and the Perth Mint coined practically all Western Australian gold with the exception of a small portion sent to Sydney and Melbourne.

(iii.) *Issues.* The Australian mints, besides issuing gold coin in the shape of sovereigns and half-sovereigns, also issue gold bullion, partly for the use of local manufacturers (jewellers and dentists), and partly for export, India taking annually a considerable quantity of gold cast into 10-oz. bars. The issues during 1909 are shewn in the table below:—

ISSUES OF GOLD FROM MINTS DURING 1909.

Mint.	Coin.			Bullion.	Total.
	Sovereigns.	Half-sovereigns.	Total.		
	£	£	£	£	£
Sydney ...	2,057,000	...	2,057,000	241,796	2,298,796
Melbourne ...	3,029,538	93,047	3,122,585	417,909	3,540,494
Perth	4,524,241	22,011	4,546,252	601,919	5,148,171
Total ...	9,610,779	115,058	9,725,837	1,261,624	10,987,461

In addition to the issue of gold the Mints are also charged with the issue of silver and bronze coin struck in London. The total value of silver coin issued in 1909 was £40,800, viz.—£9800 in half-crowns, £6400 in florins, £9200 in shillings, £8000 in sixpences, and £7400 in threepences. The value of bronze coin issued was £9620, viz., £6320 in pence, and £3300 in halfpence.

(iv.) *Withdrawals of Worn Coin.* The mints receive light and worn coin for recoinage, gold being coined locally, while silver is forwarded to London. The value of gold coin so received in 1909 amounted to £191,377, viz.—Sydney, £51,257; and Melbourne, £140,120. The value of worn silver coins received during 1909 was £12,639, viz.—Sydney, £7076; Melbourne, £5563.

3. **Total Receipts and Issues.** (i.) *Receipts.* The total quantities of gold received at the three mints since their establishment are stated in the gross as follows:—Sydney, 33,704,622 ozs.; Melbourne, 32,789,922 ozs.; and Perth, 13,292,977 ozs. As the mints pay for standard gold (22 carats) at the rate of £3 17s. 10½d. per oz., which corresponds to a value of £4 4s. $11\frac{5}{11}$d. per oz. fine (24 carats), it is possible to arrive at the number of fine ounces received from the amounts paid for the gold received. These amounts were:—Sydney, £124,246,681; Melbourne, £129,182,162; Perth, £47,101,041; corresponding to—Sydney, 29,250,155 ozs. fine; Melbourne, 30,412,066 ozs. fine; and Perth, 11,088,528 ozs. fine. Silver found in assaying is paid for if it exceeds 8 per cent.; in Sydney it has been paid for at the rate of one shilling and sixpence per oz. fine since 12th May, 1902; in Melbourne the price is fixed monthly by the Deputy-master of the Mint; and in the Perth accounts it has been taken at one shilling per oz.

(ii.) *Issues.* The total values of gold coin and bullion issued by the three mints were as shewn in the table on page 862. It may be said that about one-half of the total gold production of Australasia has passed through the three Australian mints, the

production of the Commonwealth States to the end of 1909 being valued at £514,091,517, and that of New Zealand at £74,398,318, or a total of £588,489,835 :—

TOTAL ISSUES OF GOLD FROM MINTS TO END OF 1909.

Mint.	Coin.			Bullion.	Total.
	Sovereigns.	Half-sovereigns.	Total.		
	£	£	£	£	£
Sydney	114,476,500	3,448,000	117,924,500	6,332,873	124,257,373
Melbourne ...	118,257,085	883,948	119,141,033	10,041,588	129,182,621
Perth	43,015,232	124,048	43,139,280	3,953,758	47,093,038
Total ...	275,748,817	4,455,996	280,204,813	20,328,219	300,533,032

The total issues of silver coins to the end of 1909 were £2,398,800, viz. :—Crowns, £3500; double florins, £4585; half-crowns, £716,600; florins, £528,215; shillings, £605,400; sixpences, £247,820; and threepences, £292,680.

Bronze coins to the value of £161,270 were issued, viz. :—Pence, £112,100; halfpence, £48,970; and farthings, £200.

(iii.) *Withdrawals of Worn Coin.* Complete figures as to the withdrawal of gold coin can only be given for the Sydney Mint, where they amounted to £1,026,569; at the Melbourne Mint the coins withdrawn since 1890 were worth £420,251, and no figures are given for Perth.

Withdrawals of worn silver coin amounted to £264,360 in Sydney, and to £333,366 in Melbourne.

4. **Standard Weight and Fineness of Coinage.**—The coinage of the Commonwealth is the same as that of the United Kingdom, and the same provisions as to legal tender hold good, viz., while gold coins are legal tender to any amount, silver coins are only so for an amount not exceeding forty shillings, and bronze coins up to one shilling. As will be seen from the table below, the standard weights of the sovereign and half-sovereign are respectively 123.27447 grains and 61.63723 grains, but these coins will pass current if they do not fall below 122.5 grains and 61.125 grains respectively.

STANDARD WEIGHT AND FINENESS OF COMMONWEALTH COINAGE.

Denomination.	Standard Weight.	Standard Fineness.
GOLD—	Grains.	
Sovereign	123.27447	Eleven-twelfths fine gold, viz.:— Gold ... 0.91667 Alloy ... 0.08333 — 1.00000
Half-sovereign ...	61.63723	
SILVER—		
Crown	436.36363	
Double florin ...	349.09090	
Half-crown	218.18181	Thirty-seven-fortieths fine silver, viz.:— Silver ... 0.925 Alloy ... 0.075 — 1.000
Florin	174.54545	
Shilling	87.27272	
Sixpence	43.63636	
Threepence	21.81818	
BRONZE—		
Penny	145.83333	Mixed metal, viz.:— Copper ... 0.95 Tin ... 0.04 Zinc ... 0.01 — 1.00
Half-penny ...	87.50000	
Farthing	43.75000	

5. **Prices of Silver and Australian Coinage.**—(i.) *Prices of Silver.* The value of silver has greatly decreased since its demonetisation and restricted coinage in almost the whole of Europe. Its average price in the London market is shewn in the subjoined table:—

AVERAGE PRICE OF SILVER IN LONDON MARKET, 1873 to 1909.

Year.	Price per Standard Oz.	Year.	Price per Standard Oz.	Year.	Price per Standard Oz.
	d.		d.		d.
1873 ...	59.2500	1886 ...	45.3750	1899 ...	27.5000
1874 ...	58.3125	1887 ...	44.6250	1900 ...	28.3125
1875 ...	56.8125	1888 ...	42.8750	1901 ...	27.2500
1876 ...	53.0000	1889 ...	42.6875	1902 ...	24.1250
1877 ...	54.7500	1890 ...	47.7500	1903 ...	24.7500
1878 ...	52.5625	1891 ...	45.0625	1904 ...	26.3750
1879 ...	51.1875	1892 ...	39.8125	1905 ...	27.8125
1880 ...	52.2500	1893 ...	35.6250	1906 ...	30.8750
1881 ...	51.7500	1894 ...	29.0000	1907 ...	30.1875
1882 ...	51.8125	1895 ...	29.8750	1908 ...	24.3750
1883 ...	50.5625	1896 ...	30.7500	1909 ...	23.6875
1884 ...	50.6875	1897 ...	27.5625		
1885 ...	48.6250	1893 ...	26.9375		

The monthly fluctuations during the year 1909 were as follows:—

AVERAGE PRICE OF SILVER IN LONDON MARKET, 1909.

Month.	Price per Standard Oz.	Month.	Price per Standard Oz.	Month.	Price per Standard Oz.
	d.		d.		d.
January ...	23.8125	May ...	24.3125	September ...	23.7500
February ...	23.6875	June ...	24.1875	October ...	23.5000
March ...	23.2500	July ...	23.5000	November ...	23.3750
April ...	23.6875	August ...	23.5625	December ...	24.0000

(ii.) *Profits on Coinage of Silver.* As sixty-six shillings are coined out of one pound troy of standard silver, the silver required to produce £3 6s. of coin was only worth £1 3s. 9d. during 1909; the difference of £2 2s. 3d. represents, therefore, the gross profit or seigniorage made on the coinage of every £3 6s. This gross profit is equivalent to over 64 per cent., but from it the expenses of coining (including interest on cost of machinery) and of withdrawals of worn coin must be deducted. Still, given a large annual demand for new silver coin, even the net profit amounts to a considerable sum. Negotiations, therefore, took place for a number of years between the Imperial authorities and the Governments of New South Wales and Victoria, which in 1898 resulted in permission being granted to the two Governments named to coin silver and bronze coin at the Sydney and Melbourne Mints for circulation in Australia. No steps were, however, taken in the matter, and as section 51 of the Commonwealth Constitution makes legislation concerning "currency, coinage, and legal tender" a federal matter, the question remained in abeyance until the latter part of 1908, when the Commonwealth Treasurer announced his intention of initiating the coinage of silver in the near future.

(iii.) *Coinage Bill.* In 1909 a coinage bill was introduced in the Commonwealth Parliament, which provides that the future Australian coinage shall consist of the

following coins:—In gold, £5, £2, £1, and 10s.; in silver, 2s., 1s., 6d., and 3d.; and in bronze, 1d. and ½d. Gold is to be legal tender up to any amount, silver up to 40s., and bronze up to 1s. Ultimately the coinage will be undertaken in Australia, but for the present an agreement has been made with the authorities of the Royal Mint in London, under the terms of which the coinage is to be done in London on account of the Commonwealth Government. Orders were given for the immediate coinage of £200,000 worth of silver, viz., one million florins, one million shillings, one million sixpences, and two million threepences. The coins bear on the obverse H.M. the King's head, with the Latin inscription which appears on the British coins, and on the reverse the Australian coat-of-arms, with the denomination and the date. The Imperial authorities have undertaken to withdraw £100,000 worth of the present silver coinage per annum at its face value. The first consignment of the new coinage arrived in Australia early in 1910, and by the 30th June, 1910, all the silver coins contracted for, except half a million florins, had been supplied to the Royal mints, Australia. Copper coins of the value of £10,000, viz., 1,560,000 pennies and 1,680,000 half-pennies of a design similar to that of the silver coins, have also been ordered. It is not, however, intended to withdraw any of the present copper coins, but merely to make good the "leakage," which is considerable. Possibly the time is not far distant when the copper coinage will be replaced by a nickel coinage.

6. **Decimal Coinage.**—Considered apart from the cognate subject of decimal weights and measures, the introduction of a decimal coinage would present no great difficulties. Of the various systems that have been advocated from time to time, the one that appears to meet with most favour and presents the maximum advantage, would retain the sovereign as the unit, but would divide it into a thousand parts instead of the present 960 farthings. In such a system there would be the following coins (adopting the name of "cent" for the hundredth part of the sovereign):—Sovereign=100c. (gold); half-sovereign=50c. (gold), 20c.=4s. (gold or silver); 10c.=2s. (silver); 5c.=1s. (silver); 2c.=4.8d. (silver); 1c.=2.4d. (silver or nickel); 0.5c. or 5 mils.=1.2d. (nickel or bronze); 0.2c. or 2 mils.=0.48d. (nickel or bronze); 0.1c. or 1 mil.=0.24d. (bronze). As only the subdivisions of the present shilling would be altered, such a system could be introduced with less disturbing effects on the arrangements of trade than other proposals, *e.g.*, one which would make the present farthing its unit. It will be seen from the terms of the Coinage Act, as quoted in the preceding paragraph, that no provision has been made for the introduction of a decimal coinage, apart from the omission of the half-crown.

7. **Circulation of Specie.**—Many conflicting estimates have from time to time been made as to the amount of coin in private hands. In 1892 the general manager of one of the Sydney banks estimated the coin in private hands in New South Wales at only £725,000, while the estimate of the Deputy-master of the Mint for the same period was £4,416,000, the truth lying, no doubt, somewhere between those two estimates. In 1906 the Deputy-master of the Perth Mint conducted an enquiry with the object of obtaining information on the condition of the currency in Australia. His estimate was—sovereigns, £2,500,000; half-sovereigns, £500,000; silver and bronze coin, £1,200,000. This estimate appears, however, very low, amounting only to a little over £1 per head of population. The coin in private hands amounts, however, only to a comparatively small part of the total coin in the country, the value of coin held by the banks during the quarter ended 30th June, 1910, being £28,826,729. To the active currency must be added the notes in circulation, which for the same period amounted to £3,748,482, exclusive of Queensland Treasury notes. For particulars relative to Australian notes, see page 866.

8. **Imports and Exports of Coin and Bullion.**—A table is appended shewing the imports into, and exports from, the Commonwealth of coin and bullion during the year 1909, distinguishing the countries of import and export:—

IMPORTS AND EXPORTS OF COIN AND BULLION, 1909.

Countries from which Imported and to which Exported.	Coin.				Bullion.			Total Coin and Bullion.
	Gold.	Silver.	Bronze.	Total Coin	Gold.[1]	Silver.[2]	Total Bullion.	
IMPORTS.	£	£	£	£	£	£	£	£
United Kingdom ...	...	29,455	10,292	39,747	464	1,677	2,141	41,888
Germany	...	1,500	...	1,500	...	...	...	1,500
New Zealand	10,000	...	...	10,000	934,006	617	934,623	944,623
Hawaii	1,318	...	...	1,318	...	...	...	1,318
New Caledonia ...	248	252	...	500	...	...	...	500
South Sea Islands (so described)	...	1,130	2	1,132	...	...	...	1,132
Papua	...	...	...	...	64,407	...	64,407	64,407
Philippine Islands ...	...	...	...	...	800	...	800	800
U.S. of America ...	...	...	...	...	207	...	207	207
Total Imports ...	11,566	32,337	10,294	54,197	999,884	2,294	1,002,178	1,056,375
EXPORTS.								
Belgium	...	...	...	...	785	2,110	2,895	2,895
France	882	318	...	1,200	316	1,260	1,576	2,776
Germany	450,000	...	...	450,000	393	...	393	450,393
United Kingdom ...	445,242	...	...	445,242	2,401,692	381,642	2,783,334	3,228,576
U.S. of America ...	...	...	...	...	36,251	28,765	65,016	65,016
Ceylon	853,300	...	...	853,300	90,572	166,760	257,332	1,110,632
Hong Kong	385,056	...	...	385,056	1,997	...	1,997	387,053
China	30,402	...	...	30,402	...	5,030	5,030	35,432
Japan	1,450,000	...	...	1,450,000	...	...	...	1,450,000
India	301,093	...	...	301,093	1,016,262	74,320	1,090,582	1,391,675
New Zealand	702,800	347	800	703,947	...	350	350	704,297
Java	20,000	...	...	20,000	...	...	...	20,000
Timor	92	...	...	92	...	...	...	92
Natal	650,000	...	...	650,000	...	...	...	650,000
Papua	134	350	...	484	...	...	...	484
Fiji	35,000	6,000	50	41,050	...	...	...	41,050
New Britain	614	...	...	614	...	...	...	614
New Hebrides ...	3,471	3,205	1	6,677	...	...	...	6,677
South Sea Islands (so described)	20,980	5,154	...	26,134	...	...	...	26,134
Hawaii	...	1,000	...	1,000	...	...	...	1,000
Total Exports ...	5,349,066[3]	16,374[4]	851[4]	5,366,291	3,548,268[5]	660,237[6]	4,208,505	9,574,796

1. Bullion and gold contained in matte. 2. Bullion and silver contained in matte. 3. £4,267,070 Australian produce and £1,081,996 other produce. 4. Other produce. 5. Australian produce. 6. Australian produce, £659,332; other produce, £905.

§ 2. Banking.

1. **Banking Facilities.**—(i.) *Head Offices of Banks.* Of the twenty-one banks trading in the Commonwealth, four have their head offices in London, viz., the Bank of Australasia; the Union Bank of Australia Limited; the English, Scottish, and Australian Bank Limited; and the London Bank of Australia Limited. The head offices of the following four banks are in Sydney—The Bank of New South Wales; the Commercial Banking Company of Sydney Limited; the Australian Joint Stock Bank Limited (now the Australian Bank of Commerce Limited); and the City Bank of Sydney. Five banks have their head offices in Melbourne, viz., the National Bank of Australasia Limited; the Commercial Bank of Australia Limited; the Bank of Victoria Limited; the Colonial Bank of Australasia Limited; and the Royal Bank of Australia Limited. Brisbane is the headquarters of three banks, viz., the Queensland National Bank Limited; the Royal Bank of Queensland Limited; and the Bank of North Queensland Limited. Only one bank has at present its head office in Adelaide, viz., the Bank of Adelaide; and one in Perth, viz., the Western Australian Bank. Of the two Tasmanian banks the Commercial Bank of Tasmania Limited has its head office in Hobart, and the National Bank of Tasmania Limited in Launceston. The remaining bank, the Bank of New Zealand, has its headquarters in Wellington. It is proposed, in the few instances where the banks are referred to by name, to arrange them in the order just given.

(ii.) *Establishments in Different States.* Only three of the banks have establishments in all six States of the Commonwealth, the total number of their branches and sub-branches being 526. One bank with a total of 228 branches is trading in five States, and two with 321 branches are established in four States. One bank has 59 branches distributed over three States, but has now also opened a branch in a fourth State, while six banks with a total of 357 branches, confine their operations to two States. The remaining eight banks, with 433 branches, trade only within the State where their head offices are located. Of this total of 1924 banking establishments, New South Wales contains 572; Victoria, 645; Queensland, 254; South Australia, 232; Western Australia, 167; and Tasmania, 54. In addition to the branches in the Commonwealth, four of the banks have a total of 261 establishments in New Zealand, while sixteen have each an office in London. Only two of the banks are established in the Pacific Islands, with a total of four branches. The total for the Commonwealth amounts to about one bank to every 2300 inhabitants, which does not appear out of proportion when the general sparseness of the Australian population is taken into consideration. There is, however, a difference between the various States which is not easy of explanation, but which seems to be due chiefly to the desire of a few of the banks to open up branches wherever there is a prospect of a small amount of business, while other banks are more conservative in this respect. Thus the proportion in New South Wales is about 2873 inhabitants per bank, while in Victoria it is only 2029. In Western Australia, where the proportion is lowest and amounts to one in 1673, there are, of course, exceptional circumstances which explain this apparent disproportion.

2. **Banking Legislation.**—Under section 51 of the Commonwealth Constitution Act the Commonwealth Parliament has power to legislate with respect to "Banking, other than State banking; also State banking extending beyond the limits of the State concerned, the incorporation of banks, and the issue of paper money." Until quite recently the only Commonwealth banking legislation passed was Act No. 27 of 1909, "An Act relating to Bills of Exchange, Cheques, and Promissory Notes," which came into force on the 1st February, 1910. In the session of 1910, however, two Acts relating to banking were passed by the Federal Parliament. The first was the Australian Notes Act No. 11 of 1910, assented to on 16th September, 1910, and proclaimed 1st November, 1910; and the second the Bank Notes Tax Act No. 14 of 1910, assented to on 10th October, 1910, and to be proclaimed 1st July, 1911. Under the first of these Acts the Commonwealth Treasurer is empowered to issue notes which shall be legal tender throughout the Commonwealth, and redeemable at the seat of Federal Government. The notes are issued in denominations of 10s., £1, £5, £10, or any multiple of £10. The Act directs the Treasurer to hold the following reserve of gold coin:—

(*a*) An amount not less than one-fourth of the amount of Australian notes issued up to seven million pounds;

(*b*) An amount equal to the amount of Australian notes issued in excess of seven million pounds.

For the purposes of estimating the reserve, notes which have been redeemed are not included amongst those issued.

The Australian Notes Act prohibits the circulation of notes issued by a State six months after the commencement of the Act, and such notes will then cease to be legal tender. In addition the Bank Notes Act imposes a tax of 10 per cent. per annum in respect of all bank notes issued or re-issued by any bank in the Commonwealth after the commencement of this Act and not redeemed.

Under the existing laws banks are required to furnish quarterly statements of their average assets and liabilities, but these statements are not equally complete in all the States. Until the close of 1907 these quarterly statements, together with the periodical balance-sheets of the banks (generally half-yearly, but in a few cases yearly), were the only information available in regard to banking business. During the year 1908 the Commonwealth Statistician, under the provisions of the Census and Statistics Act, asked the banks for quarterly returns giving slightly more detailed information than had previously been obtained. As, however, a few of the banks have found it

impossible up to the present to give all the particulars required, while promising to do so in future, the returns for the years 1908, 1909 and 1910 have been practically left in the same condition as those for 1907 and previous years.

The Acts under which the various banks are incorporated are not all of the same nature, but it may be stated that while most of the older banks were incorporated by special Acts, *e.g.*, the Bank of New South Wales, by Act of Council 1817; the Bank of Australasia, by Royal Charter; the Bank of Adelaide, by Act of the South Australian Parliament; and the Bank of New Zealand, by Act of the General Assembly of New Zealand, the newer banks are generally registered under a "Companies Act," or some equivalent Act. This is also the case with those banks which, after the crisis of 1893, were reconstructed.

3. **Capital Resources of Banks.**—The paid-up capital of the twenty-one banks, together with their reserve funds, and the rate per cent. and the amount of their last dividends, is shewn in the table hereunder. The information relates to the balance-sheet last preceding the 30th June, 1910. In regard to the reserve funds it must be stated that in the case of some of the banks these are invested in Government securities, while in other cases they are used in the ordinary business of the banks, and in a few instances they are partly invested and partly used in business.

CAPITAL RESOURCES OF BANKS.

Bank.	Paid-up Capital.	Rate per cent. per annum of last Dividend and Bonus.	Amou't of last ½-yrly. Dividend & Bonus.	Amount of Reserved Profits.
	£	%	£	£
Bank of Australasia	1,600,000	12 &8/-Bonus p.s.	112,000	1,727,471
Union Bank of Australia Limited	1,500,000	14	105,000	1,328,879
English, Scottish, and Australian Bank Limited ...	539,438	6	32,366[7]	212,039
London Bank of Australia Limited	548,153[1]	5½ Preferen. 5 Ordinary	27,858[7]	71,680
Bank of New South Wales	2,621,340	10	125,000	1,780,335
Commercial Banking Company of Sydney Limited	1,500,000	10	75,000	1,414,611
Australian Bank of Commerce Limited	958,172	...	...	...
City Bank of Sydney	400,000	3	6,000	16,595
National Bank of Australasia Limited	1,498,220[2]	6	44,947	238,037
Commercial Bank of Australia Limited ...	2,212,969[3]	3 Preferen. ... Ordinary	31,760	7,473
Bank of Victoria Limited	1,478,010[4]	5	36,950	248,921
Colonial Bank of Australasia Limited	439,281	7	15,375	145,503
Royal Bank of Australia Limited	300,000	7	10,500	135,119
Queensland National Bank Limited	413,369[5]	...	...	...
Royal Bank of Queensland Limited	515,492	4½	11,483	75,438
Bank of North Queensland Limited	100,000	5	2,500	23,775
Bank of Adelaide	400,620	10	20,000	386,838
Western Australian Bank	200,000	20	19,189	518,216
Commercial Bank of Tasmania Limited	175,000	12	10,500	193,295
National Bank of Tasmania Limited	152,040	7	5,321	50,000
Bank of New Zealand	2,000,000[6]	3¾ Preferen. 5 Ordinary & 2½ Bonus	56,250	864,134
Total	19,552,104	...	...	9,438,359

1. £171,930 preferential, £376,223 ordinary. 2. £305,780 preferential, £1,192,440 ordinary. 3. £2,117,350 preferential, £95,619 ordinary. 4. £416,760 preferential, £1,061,250 ordinary. 5. After deducting £47,156 paid on forfeited shares. 6. £500,000 preference shares issued to the Crown under the "Bank of New Zealand Act 1903," £500,000 ordinary shares, and £1,000,000 guaranteed stock. 7. For 12 months.

4. **Liabilities and Assets of Banks.**—(i.) *Liabilities of Banks for Quarter ended 30th June, 1910.* As already stated, the banks transacting business in any State are obliged, under the existing State laws, to furnish a quarterly statement of their assets and liabilities, which contains the averages of the weekly statements prepared by the bank for that purpose, and have, during the years 1908, 1909 and 1910, furnished quarterly statements to the Commonwealth Statistician. As all other financial returns in this work embrace, so far as possible, a period ended 30th June, 1910, it seems advisable to give the banking figures for the quarter ended on that date, and, where they are shewn for a series of years, similarly to use the figures for the June quarter of each year. The

liabilities are those to the general public, and are exclusive of the banks' liabilities to their shareholders, which are shewn in the preceding table:—

AVERAGE LIABILITIES OF BANKS IN EACH STATE OF THE COMMONWEALTH FOR THE QUARTER ENDED 30th JUNE, 1910.

State.	Notes in Circulation, not bearing interest.	Bills in Circulation, not bearing interest.	Balances Due to other Banks.	Deposits.			Total Liabilities.
				Not Bearing Interest.	Bearing Interest.	Total.	
	£	£	£	£	£	£	£
New South Wales	1,801,805	370,374	100,348	23,484,284	26,534,601	50,018,885	52,291,412
Victoria ...	901,238	173,826	206,116	15,049,917	26,759,791	41,809,708	43,090,888
Queensland ...	*	177,580	57,812	7,274,059	10,145,975	17,420,034	17,655,426
South Australia	538,761	37,348	77,959	4,397,660	6,385,230	10,782,890	11,436,958
West. Australia	338,123	46,396	127,733	3,269,132	2,860,536	6,129,668	6,641,920
Tasmania ...	168,555	16,234	147	1,758,810	1,971,141	3,729,951	3,914,887
Commonwealth	3,748,482	821,758	570,115	55,233,862	74,657,274	129,891,136	135,031,491

* In Queensland, Treasury notes were used instead of bank notes.

(ii.) *Assets of Banks for Quarter ended 30th June, 1910.* The average assets of the banks are shewn in the following table:—

AVERAGE ASSETS OF BANKS IN EACH STATE OF THE COMMONWEALTH FOR THE QUARTER ENDED 30th JUNE, 1910.

State.	Coined Gold and Silver and other Metals.	Gold and Silver in Bullion or Bars.	Government and Municipal Securities.	Landed and House Property.	Notes and Bills of other Banks.	Balances Due from other Banks.	Discounts, Overdrafts, and all other Assets.	Total Assets.
	£	£	£	£	£	£	£	£
N.S.W.	12,785,107	194,906	2,694,404	1,824,349	406,916	503,850	34,809,345	53,218,877
Victoria	7,867,697	372,441	122,138	1,755,736	312,782	292,344	33,064,881	43,788,019
Q'land	2,752,697	141,250	262,971	689,333	832,044*	246,964	14,167,480	19,092,739
S. Aust.	2,376,073	6,629	118,202	340,481	112.292	95,903	6,426,809	9,476,389
W. Aust.	2,317,271	607,673	139,529	196,231	56,560	101,717	5,889,061	9,308,042
Tas. ...	727,884	...	193,646	113.861	13,273	102,891	2,722,645	3,874,200
Cwlth.	28,826,729	1,322,899	3,530,890	4,919,991	1,733,867	1,343,669	97,080,221	138,758,266

* Including Queensland Treasury Notes, £760,706.

(iii.) *Liabilities of Banks for June Quarter, 1901 to 1910.* In the subjoined table, which shews the average liabilities of the banks for the quarters ended 30th June, 1901 to 1910, for the Commonwealth as a whole, it will be seen that the growth in total liabilities is almost entirely due to an increase in the deposits, and that deposits not bearing interest and deposits bearing interest have shared in that increase very equally:—

AVERAGE LIABILITIES OF BANKS IN THE COMMONWEALTH FOR THE QUARTER ENDED 30th JUNE IN THE YEARS 1901 to 1910.

Year.	Notes in Circulation not Bearing Interest.	Bills in Circulation not Bearing Interest.	Balances due to other Banks.	Deposits.			Total Liabilities.
				Not Bearing Interest.	Bearing Interest.	Total.	
	£	£	£	£	£	£	£
1901	3,399,462	525,958	376,972	37,457,960	54,029,188	91,487,148	95,789,540
1902	3,305,135	518,504	459,255	37,727,861	55,708,373	93,436,234	97,719,128
1903	3,315,747	539,132	407,947	37,056,187	54,701,047	91,757,234	96,020,060
1904	3,133,268	521,267	290,441	35,630,255	55,917,848	91,548,103	95,493,079
1905	3,036,879	555,256	446.555	36,847,610	61,295,775	98,143,385	102,182,075
1906	3,244,256	568,670	577,094	41,036,116	65,479,150	106,515,266	110,905,286
1907	3,563,181	801,878	444,460	46,781,234	65,916,735	112,697,969	117,507,488
1908	3,536,227	707,903	796,447	46,015,448	67,678,940	113,694,388	118,734,965
1909	3,510,629	720,853	555,806	46,812,632	70.945,623	117,758,255	122,545,543
1910	3,748,482	821,758	570,115	55,233,862	74,657,274	129,891,136	135,031,491

(iv.) *Assets of Banks for June Quarter, 1901 to 1910.* A similar table shewing the average assets of the banks for the June quarters of each of the years 1901 to 1910 is shewn below. Bullion, in the case of the Tasmanian banks, is included with coin in the years 1901 to 1907.

AVERAGE ASSETS OF BANKS IN THE COMMONWEALTH FOR THE QUARTER ENDED 30th JUNE IN THE YEARS 1901 to 1910.

Year.	Coined Gold and Silver and other Metals.	Gold and Silver in Bullion or Bars.	Landed and other Property.	Notes and Bills of other Banks.	Balances Due from other Banks.	All other Debts Due to the Banks.	Total Assets.
	£	£	£	£	£	£	£
1901	18,581,224	1,199,304	6,145,742	695,676	1,215,701	93,710,166	121,547,813
1902	19,744,914	1,330,304	5,337,277	656,302	1,152,534	94,015,098	122,236,429
1903	18,513,784	1,507,825	5,289,440	741,977	1,115,369	93,301,160	120,469,555
1904	17,910,771	1,447,698	5,245,312	692,688	781,368	87,705,222	113,783,059
1905	19,988,465	1,501,890	5,212,799	705,089	809,929	85,766,259	113,984,431
1906	21,268,679	1,412,763	5,160,875	802,225	1,234,921	87,889,121	117,768,584
1907	22,420,395	1,291,033	5,028,379	840,217	1,170,276	94,990,435	125,740,735
1908	23,578,293	1,353,267	4,938,212	1,692,402	1,131,612	100,844,019*	133,537,805
1909	24,943,910	1,353,933	4,852,471	1,720,975	1,153,611	97,692,800†	131,717,700
1910	28,826,729	1,322,899	4,919,991	973,161	1,343,669	100,611,111‡	138,758,266§

* Including £3,454,715 Government and municipal securities. † Including £3,085,058 Government and municipal securities. ‡ Including £3,530,890 Government municipal securities. § Including £760,706 Queensland Treasury notes.

The figures do not call for much comment. As the table shews, the increase in the total amount of assets is mainly due to an increase in the amount of specie held by the banks against liabilities at call and advances.

5. **Percentage of Coin and Bullion to Liabilities at Call.**—(i.) *Commonwealth.* Although it is not strictly correct to assume that the division of deposits into those bearing interest and not bearing interest would in every case coincide with a division into fixed deposits and current accounts, the division, in default of a better one, must be adopted, and in the following table "liabilities at call" are therefore understood to include the note circulation of the banks and the deposits not bearing interest:—

PERCENTAGE OF COIN AND BULLION TO LIABILITIES AT CALL, COMMONWEALTH, 1901 TO 1910.

Year.	Liabilities at Call.			Coin and Bullion.			Percentage of Coin and Bullion to Liabilities at Call.
	Notes in Circulation.	Deposits not Bearing Interest.	Total.	Coin.	Bullion.	Total.	
	£	£	£	£	£	£	%
1901 ...	3,399,462	37,457,960	40,857,422	18,581,224	1,199,304	19,780,528	48.41
1902 ...	3,305,135	37,727,861	41,032,996	19,744,914	1,330,304	21,075,218	51.36
1903 ...	3,315,747	37,056,187	40,371,934	18,513,784	1,507,825	20,021,609	49.59
1904 ...	3,133,747	35,630,255	38,764,002	17,910,771	1,447,698	19,358,469	49.94
1905 ...	3,036,879	36,847,610	39,884,489	19,988,465	1,501,890	21,490,355	53.88
1906 ...	3,244,256	41,036,116	44,280,372	21,268,679	1,412,763	22,681,442	51.22
1907 ...	3,563,181	46,781,234	50,344,415	22,420,395	1,291,033	23,711,428	47.10
1908 ...	3,536,227	46,015,448	49,551,675	23,578,293	1,353,267	24,931,560	50.31
1909 ...	3,510,629	46,812,632	50,323,261	24,943,910	1,353,933	26,297,843	52.26
1910 ...	3,748,482	55,233,862	58,982,344	28,826,729	1,322,899	30,149,628	51.12

It would appear from the figures just given that the banks generally consider it advisable to hold about half the amount of liabilities at call in coin and bullion. The drop to 47.10 per cent. in 1907 was due to the very large increase in the amount of deposits during the year, with which the increase in the coin and bullion held, considerable though it was, did not keep pace.

(ii.) *Queensland Treasury Notes.* No bank-notes are issued by any of the banks in Queensland, where a Treasury note has taken the place of bank-notes since 1893. These Treasury notes are disregarded in the quarterly statements of the banks; according to Treasury returns the amount outstanding on 30th June, 1910, was £1,579,568, of which £815.425 was in circulation, while the balance of £764,143 was held by the banks.

(iii.) *States.* The proportion of coin and bullion to liabilities at call varies considerably in the different States, and is generally highest in Western Australia, and lowest in Queensland and Tasmania. A table is appended shewing the percentages for each State for the quarter ended 30th June, in each of the years 1901 to 1910:—

PERCENTAGE OF COIN AND BULLION TO LIABILITIES AT CALL, STATES AND COMMONWEALTH, 1901 to 1910.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	%	%	%	%	%	%	%
1901	45.96	47.82	40.95	54.94	71.59	37.49	48.41
1902	46.97	51.91	44.42	57.67	80.46	35.12	51.36
1903	47.47	50.58	46.33	50.12	61.83	42.20	49.59
1904	48.67	52.92	39.66	51.45	58.70	46.41	49.94
1905	50.51	58.01	45.78	55.66	67.35	44.25	53.88
1906	48.49	53.55	40.43	51.25	73.98	42.39	51.22
1907	44.81	49.17	37.20	46.73	71.14	39.84	47.10
1908	47.70	54.68	41.09	45.63	76.09	40.06	50.31
1909	50.38	56.57	39.68	46.90	83.29	41.48	52.26
1910	51.33	51.66	39.78	48.27	81.09	37.77	51.12

6. **Deposits and Advances.**—(i.) *Total Deposits.* The total amount of deposits held by the banks shews a steady advance during the period under review, although the totals for 1903 and 1904, when the country was slowly recovering from the effects of the drought, were slightly below those for 1902:—

TOTAL DEPOSITS IN BANKS, STATES AND COMMONWEALTH, 1901 to 1910.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
1901	33,118,860	30,991,038	13,525,489	6,270,396	4,402,519	3,178,846	91,487,148
1902	34,382,531	30,839,444	13,795,737	6,212,957	4,742,579	3,462,986	93,436,234
1903	33,309,691	30,719,334	12,645,725	6,603,225	4,785,839	3,693,420	91,757,234
1904	33,058,342	31,188,971	12,626,184	6,375,267	4,726,158	3,573,181	91,548,103
1905	35,972,265	33,642,092	12,987,859	6,892,103	4,999,650	3,649,416	98,143,385
1906	39,099,630	36,764,392	13,665,110	7,513,802	5,645,701	3,826,631	106,515,266
1907	41,967,265	38,393,179	14,852,584	8,247,366	5,500,112	3,737,463	112,697,969
1908	43,616,984	37,538,722	15,328,056	8,644,346	4,894,639	3,671,641	113,694,388
1909	44,626,194	38,611,731	16,138,931	9,727,879	4,987,894	3,665,626	117,758,255
1910	50,018,885	41,809,708	17,420,034	10,782,890	6,129,668	3,729,951	129,891,136

(ii.) *Deposits per Head of Population.* To shew the extent to which the population makes use of the banking facilities afforded to it, a table is given hereunder shewing the amount of total deposits per head of mean population for each of the years 1901 to 1910. The figures must not be taken to shew part of the savings of the people, as a large

proportion of the deposits is non-interest-bearing and therefore presumably used in the business of the banks' customers, together with a small part of the interest-bearing deposits.

DEPOSITS PER HEAD OF POPULATION, STATES AND COMMONWEALTH, 1901 TO 1910.

Year.	N.S.W.			Victoria.			Q'land.			S. Aust.			W. Aust.			Tasmania.			C'wealth.		
	£	s.	d.	£	s.	d.	£	s	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
1901 ...	24	6	5	25	14	9	26	18	8	17	7	0	23	5	11	18	10	5	24	2	9
1902 ...	24	14	4	25	9	8	27	0	5	17	1	8	22	18	2	20	0	8	24	4	8
1903 ...	23	10	7	25	8	7	24	13	3	18	1	10	21	11	2	20	17	5	23	10	0
1904 ...	22	18	8	25	17	2	24	5	8	17	5	5	19	17	2	20	1	8	23	3	3
1905 ...	24	8	1	27	15	7	24	13	6	18	8	3	19	18	0	20	10	2	24	8	11
1906 ...	25	17	11	30	1	3	25	11	10	19	15	7	21	13	0	21	10	7	26	1	6
1907 ...	27	1	2	30	0	10	27	7	9	21	6	3	20	16	3	21	2	9	27	2	1
1908 ...	27	12	10	29	18	4	27	19	2	21	16	4	18	10	3	20	5	2	26	18	6
1909 ...	28	0	9	30	7	6	29	4	5	23	17	10	18	13	6	19	14	6	27	10	11
1910 ...	30	16	11	32	1	7	30	8	5	25	18	4	22	8	2	19	19	3	29	13	11

(iii.) *Total Advances.* In the quarterly statements furnished by the banks the column headed "all other debts due to the banks," which usually averages from 75 to 80 per cent. of the total assets, is made up of such miscellaneous items as bills discounted, promissory notes discounted, overdrafts on personal security, overdrafts secured by deposit of deeds or by mortgage, etc. The quarterly returns furnished to the Commonwealth Statistician in 1908 and 1909 provided for a division of the amounts contained under this heading into a number of sub-headings, but all the banks were not in a position to make the necessary division, so that under present circumstances it is impossible to separate these items, and the total amounts contained in the column must, therefore, be treated as advances. The following table shews the totals for each State during the years 1901 to 1910:—

ADVANCES BY BANKS, STATES AND COMMONWEALTH, 1901 to 1910.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
1901...	39,194,344	30,958,243	13,568,589	4,332,730	3,117,818	2,538,442	93,710,166
1902...	39,797,960	30,446,032	13,633,376	4,434,031	3,276,409	2,397,290	93,985,098
1903...	38,658,565	29,905,949	14,082,725	4,428,983	3,683,451	2,541,487	93,301,160
1904...	33,237,755	29,426,052	13,974,233	4,401,991	3,955,108	2,710,083	87,705,222
1905...	31,965,017	28,593,201	13,590,333	4,793,936	4,172,983	2,650,789	85,766,259
1906...	32,057,192	29,699,683	13,850,921	5,053,184	4,635,624	2,592,517	87,889,121
1907...	34,460,993	31,894,070	15,076,455	5,545,346	5,140,911	2,872,660	94,990,435
1908...	37,948,889	33,254,780	15,245,537	5,805,575	5,581,001	3,008,237	100,844,019
1909...	34,853,220	31,455,141	14,499,669	5,699,546	5,384,518	2,715,648	94,607,742
1910...	34,809,345	33,064,881	14,167,480	6,426,809	5,889,061	2,722,645	97,080,221

(iv.) *Proportion of Advances to Deposits.* The percentage borne by advances to total deposits shews to what extent the needs of one State have to be supplied by the resources of another State, and where the percentage for the Commonwealth as a whole exceeds 100, as it did in 1901, 1902, and 1903, the banks must have supplied the deficiency from their own resources, or from deposits obtained outside the Commonwealth. The following figures shew, however, that the banking business of the Commonwealth has been practically self-contained during the period under review:—

PERCENTAGE OF ADVANCES TO TOTAL DEPOSITS, STATES AND COMMONWEALTH, 1901 TO 1910.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	%	%	%	%	%	%	%
1901	118.34	99.89	100.32	69.10	70.82	79.85	102.43
1902	115.75	98.72	98.82	71.37	69.08	69.23	100.59
1903	116.06	97.35	111.36	67.07	76.97	68.81	101.68
1904	100.54	94.35	110.68	69.05	83.69	75.85	95.80
1905	88.86	84.99	104.64	69.56	83.47	72.64	87.39
1906	81.99	80.78	101.36	67.25	82.11	67.75	82.51
1907	82.11	83.07	101.51	67.24	93.47	76.86	84.29
1908	87.00	88.59	99.46	67.16	114.00	81.93	88.70
1909	78.10	81.47	89.84	58.59	107.95	74.08	80.34
1910	69.59	79.08	81.33	59.60	96.07	72.99	74.74

7. **Clearing Houses.**—The Sydney Banks' Exchange Settlement and the Melbourne Clearing House, at which two institutions settlements are effected daily between the banks doing business in New South Wales and Victoria respectively, publish figures of the weekly clearances effected. From these figures it appears that in 1910 the total clearances in Sydney amounted to £274,344,000, and in Melbourne to £261,383,000. These figures represent in both cases an increase on those for 1909, the increase in Sydney amounting to £33,698,000, and in Melbourne to £21,719,000. Owing to the different distribution of the banking business in the two cities these figures do not, however, afford a fair comparison of the volume of banking business transacted in Sydney and Melbourne.

§ 3. Companies.

1. **General.**—Returns in regard to registered companies are defective, and, with few exceptions, are not available for Tasmania. They embrace (*a*) Returns relating to Trustees, Executors, and Agency Companies; (*b*) Returns relating to Registered Building and Investment Societies; and (*c*) Returns relating to Registered Co-operative Societies.

2. **Trustees, Executors, and Agency Companies.**—Returns are available of seven Victorian, two New South Wales, one Queensland, one South Australian, one Western Australian, and two Tasmanian companies. The paid-up capital of these fourteen companies amounted to £404,422; reserve funds and undivided profits to £290,555; other liabilities, £112,176; total liabilities, £807,153. Among the assets are included:—Deposits with Governments, £140,100; other investments in public securities, fixed deposits, etc., £185,515; loans on mortgage, £136,360; property owned, £202,260; other assets, £152,928. The net profits for the year were £65,453, and the amount of dividends and bonus £33,365. Returns as to the amount at credit of estates represented by assets are only available for six companies, viz.:—Two Victorian, one New South Wales, one Queensland, one South Australian, and one Western Australian, the total shewn being £23,423,172.

Probably nearly £20,000,000 would at the least have to be added to this amount for the remaining eight companies, so that the total amount is probably not far short of £44,000,000. None of these companies receive deposits, and advances are only made under exceptional circumstances, and to a very limited extent, the total so shewn in the last balance-sheets being only £75,754.

3. **Registered Building and Investment Societies.**—Returns have been received of a total of 155 societies, viz., 73 in New South Wales, 27 in Victoria, 15 in Queensland, 24

in South Australia, 12 in Western Australia, and 4 in Tasmania. The balance-sheets cover various periods ended during the second half of 1909 and the first half of 1910, so that the returns may be assumed to roughly correspond to the financial year 1909-10. The liabilities of the societies are stated as follows:—

LIABILITIES OF REGISTERED BUILDING AND INVESTMENT SOCIETIES, 1909-10.

State.	Paid-up Capital or Subscriptions.	Reserve Funds.	Deposits.	Bank Overdrafts and other Liabilities.	Total Liabilities.
	£	£	£	£	£
New South Wales	546,728	78,709	431,720	54,626	1,111,783
Victoria ...	1,247,497	212,116	714,265	337,158	2,511,036
Queensland ...	334,218	25,861	81,349	20,045	461,473
South Australia ...	318,943	3,946	2,408	5,552	330,849
Western Australia	100,953	...	13,795	13,097	127,845
Tasmania ...	109,344	*	145,693	...	255,037
Commonwealth ...	2,657,683	320,632	1,389,230	430,478	4,798,023

* Not available.

The assets of the companies for the same period were as follows :—

ASSETS OF REGISTERED BUILDING AND INVESTMENT SOCIETIES, 1909-10.

State.	Advances on Mortgage.	Landed and House Property, Furniture, etc.	Cash in Hand and on Deposit and other Assets.	Total Assets.
	£	£	£	£
New South Wales	1,001,984	66,793	98,984	1,167,761
Victoria	1,741,368	602,029	117,667	2,461,064
Queensland	435,549	11,758	23,418	470,725
South Australia	322,262	6,181	17,065	345,508
Western Australia	123,507	25	4,313	127,845
Tasmania	269,847	18,848	...	288,695
Commonwealth ...	3,894,517	705,634	261,447	4,861,598

Complete statistical information is furnished in the following table :—

REGISTERED BUILDING AND INVESTMENT SOCIETIES, 1909-10.

Particulars.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Cwlth.
Number of societies	73	27	15	24	12	4	155
Number of shareholders	*	7,413	4,194	6,798	2,794	2,812	24,011†
Number of shares	*	*	506,702	13,950	8,234	9,995	538,881‡
Number of borrowers	*	8,127	3,481	2,272	856	62,020	76,756†
Income for year from interest ...	*	127,520	29,377	12,008	...	75,664	244,569†
Working expenses for year	*	32,665	7,052	4,559	3,101	3,664	51,041†
Amount of deposits during year ...	*	426,627	61,354	22,032	31,363	140,575	681,951†
Repayment of loans during year ...	*	330,848	120,309	68,032	36,722	*	555,911§
Loans granted during year	*	242,790	122,399	89,290	29,981	*	484,460§

* Not available. † Exclusive of New South Wales. ‡ Exclusive of New South Wales and Victoria. § Exclusive of New South Wales and Tasmania.

4. **Registered Co-operative Societies.**—Returns are available of 91 societies, of which 39 were in New South Wales, 37 in Victoria, 5 in Queensland, 7 in South Australia, and 3 in Western Australia. As in the case of Building and Investment Societies, so in the case of Co-operative Societies do the balance-sheets cover various periods ended during the financial year 1909-10. The liabilities of the 91 societies are shewn in the following table :—

LIABILITIES OF REGISTERED CO-OPERATIVE SOCIETIES, 1909-10.

State.	Paid-up Capital.	Reserve Funds.	Bank Overdrafts and Sundry Creditors.	Other Liabilities, Profit and Loss Account, &c.	Total Liabilities.
	£	£	£	£	£
New South Wales	97,891	42,152	52,592	20,548	213,183
Victoria	118,903	8,192	116,550	41,968	285,613
Queensland	6,153	1,827	1,781	1,175	10,936
South Australia	91,664	6,743	24,462	6,593	129,462
Western Australia	6,388	1,180	19,814	18,029	45,411
Commonwealth* ...	320,999	60,094	215,199	88,313	684,605

* Exclusive of Tasmania.

The assets of the societies are shewn hereunder:—

ASSETS OF REGISTERED CO-OPERATIVE SOCIETIES, 1909-10.

State.	Stock and Fittings.	Cash in Hand and Sundry Debtors.	Freehold and other Property and other Assets.	Total Assets.
	£	£	£	£
New South Wales ...	117,865	134,522	...	252,387
Victoria	196,316	82,666	17,839	296,821
Queensland	7,838	4,317	64	12,219
South Australia ...	61,799	41,219	33,512	136,530
Western Australia ...	34,216	10,691	504	45,411
Commonwealth* ...	418,034	273,415	51,919	743,368

* Exclusive of Tasmania.

The following table gives statistical information, as far as available :—

REGISTERED CO-OPERATIVE SOCIETIES, 1909.

	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
Number of societies on 31st Dec., 1909	39	37	5	7	3	*	91†
Total No. of members on 31st Dec., 1909	*	23,622	10,803	7,502	695	*	42,622‡
Total income for year 1909 ... £	*	480,702	15,737	278,911	158,227	*	933,577‡
Working expenses for year ended 31st December, 1909 ... ... £	*	90,212	9,205	33,328	160,653	*	293,398‡

* Not available. † Exclusive of Tasmania. ‡ Exclusive of Tasmania and New South Wales.

§ 4. Savings Banks.

1. **General.**—The total number of savings banks, with their branches and agencies, in the Commonwealth, closely approximates to that of banks of issue, and was at the middle of 1910, 1838, distributed as follows:—New South Wales, 653; Victoria, 416; Queensland, 233; South Australia, 250 (exclusive of 149 school penny savings banks); Western Australia, 149 (exclusive of 138 school penny savings banks); and Tasmania, 137.

In the following tables the figures for Victoria, Queensland, South Australia and Western Australia refer to financial years ended 30th June, and those of New South Wales to calendar years ended 31st December next preceding. In the case of Tasmania figures for the two joint-stock savings banks are made up to the last day of February in each year, and those for the Government Savings Bank to the 31st December, except in 1906-7, 1907-8, 1908-9, and 1909-10 where they relate to the year ended 30th June.

2. **Depositors.**—The total number of depositors, *i.e.*, of persons having accounts open, not of those making deposits, in each of the last ten years is shewn in the following table:—

NUMBER OF DEPOSITORS IN SAVINGS BANKS, 1900-1 to 1909-10.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
1900-1 ...	282,643	393,026	81,025	126,032	39,318	42,509	964,553
1901-2 ...	306,311	410,126	84,685	132,084	45,108	44,527	1,022,841
1902-3 ...	323,212	418,511	80,043	137,147	48,008	46,451	1,053,372
1903-4 ...	331,956	432,867	80,959	141,572	54,873	47,904	1,090,131
1904-5 ...	355,824	447,382	84,165	146,366	59,764	49,438	1,142,939
1905-6 ...	364,039	466,752	88,026	152,487	63,573	50,731	1,185,608
1906-7 ...	392,050	491,318	92,912	161,855	66,737	53,817	1,258,689
1907-8 ...	421,928	511,581	100,324	*174,289	†72,178	55,620	1,335,920
1908-9 ...	436,029	532,425	106,627	‡187,482	§77,748	58,145	1,398,456
1909-10 ...	460,251	560,515	114,720	‡201,275	§86,166	60,646	1,483,573

* Inclusive of 2011 depositors in school penny savings banks.
† " 2645 " " " " in 1909 and 6881 in 1910.
‡ " 4607 " " " "
§ " 4590 " " " " " 6781 "

The subjoined table shews the above figures in relation to the population of the States; it must, of course, be borne in mind that savings bank accounts are not restricted to the adult population, but that it is, on the contrary, a very usual practice to open accounts in the name of children. Even so, the proportion is a large one, amounting to more than three-tenths of the total population of the Commonwealth, and rising both in Victoria and in South Australia to considerably more than two-fifths.

DEPOSITORS IN SAVINGS BANKS PER THOUSAND OF POPULATION,
1900-1 TO 1909-10.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
1900-1	208	326	161	349	208	246	255
1901-2	223	339	166	363	218	255	266
1902-3	230	346	156	376	216	262	271
1903-4	233	359	156	383	231	267	277
1904-5	244	369	160	391	238	274	286
1905-6	244	382	165	401	244	280	291
1906-7	257	397	171	418	253	304	304
1907-8	269	407	182	438	272	308	317
1908-9	274	415	188	457	287	317	324
1909-10	281	429	196	482	310	329	336

3. **Deposits.**—The total amount of deposits in the savings banks of the six States reaches the large sum of fifty-three million pounds, and would no doubt be even larger if the banks did not restrict interest-bearing deposits to certain limits. It must be remembered that though not granting him facilities to draw cheques, the Australian savings banks practically afford the small tradesman all the advantages of a current account, in addition to which they also allow him interest on his minimum monthly balance, instead of charging him a small fee for keeping his account, as the banks of issue do. The rates of interest allowed, and the limits of interest-bearing deposits, are as follows:—New South Wales, Government Savings Bank, 3 per cent. up to £500; Savings Bank of New South Wales, 3½ per cent. up to £200; Victoria, 3½ per cent. on first £100, and 3 per cent. on excess from £101 to £250; Queensland, 3 per cent. up to £200; South Australia, 2½ per cent. on accounts closed during the year, and 3¼ per cent. up to £250 on accounts remaining open; Western Australia, 3 per cent. up to £1000; Tasmania, Government Savings Bank, 3 per cent. up to £250; Hobart Trustees' Savings Bank, 3½ per cent. up to £150; Launceston Trustees' Savings Bank, 3½ per cent. up to £150. The savings banks of four of the States—New South Wales (Government Savings Bank), Victoria, South Australia, and Western Australia—have, for the further benefit of depositors, entered into a reciprocity arrangement, under which money deposited in one State may be drawn out in another State, and even by telegraph.

The table below shews the total amounts at credit of depositors in each of the last ten years:—

DEPOSITS IN SAVINGS BANKS, 1900-1 to 1909-10.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
1900-1	10,901,382	9,662,006	3,896,170	3,795,631	1,618,359	1,009,097	30,882,645
1901-2	11,808,710	10,131,604	4,118,337	3,988,649	1,889,082	1,092,047	33,028,429
1902-3	12,425,464	10,341,857	3,772,686	4,187,590	1,988,624	1,194,157	33,910,378
1903-4	12,344,623	10,582,808	3,741,967	4,217,836	2,079,763	1,249,760	34,216,757
1904-5	12,982,648	10,896,741	3,875,197	4,398,041	2,207,296	1,263,542	35,623,465
1905-6	13,963,635	11,764,179	4,142,791	4,766,907	2,316,161	1,332,546	38,286,219
1906-7	15,320,532	12,792,590	4,543,104	5,320,872	2,633,135	1,488,056	42,098,289
1907-8	17,530,157	13,428,676	4,921,881	5,820,344	2,885,463	1,560,951	46,147,472
1908-9	18,805,082	14,101,710	5,158,219	6,347,271	3,059,738	1,605,919	49,077,939
1909-10	20,150,574	15,417,888	5,622,986	6,791,320	3,481,764	1,652,966	53,117,498

A comparison between the tables shewing the number of depositors and the amount of deposits reveals the fact that the average amounts to the credit of each depositor are considerably larger in one State than in another; in other words, that in one State a comparatively larger proportion of the population makes use of the savings banks, and that the natural result is a smaller amount to the credit of the individual depositor. Within the same State there is little variation in the figures from year to year.

AVERAGE AMOUNTS PER DEPOSITOR IN AUSTRALIAN SAVINGS BANKS,

1900-1 TO 1909-10.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1900-1	38 11 5	24 11 8	48 1 9	30 2 4	41 3 3	23 14 9	32 0 4
1901-2	38 11 0	24 14 1	48 12 7	30 3 11	41 17 7	24 10 6	32 5 10
1902-3	38 8 10	24 14 3	47 2 8	30 10 8	41 8 5	25 14 2	32 3 10
1903-4	37 3 9	24 9 0	46 4 5	29 15 10	37 18 0	26 1 9	31 7 9
1904-5	36 9 9	24 7 2	46 0 10	30 1 0	36 18 8	25 11 2	31 3 4
1905-6	38 7 2	25 4 1	47 1 3	31 5 3	36 8 8	26 5 4	32 5 10
1906-7	39 1 7	26 0 9	48 17 11	32 17 6	39 9 1	27 13 0	33 8 11
1907-8	41 10 11	26 5 0	49 1 2	33 7 11	39 19 6	28 1 4	34 10 10
1908-9	43 11 2	26 9 9	48 7 6	33 17 1	39 7 1	27 12 5	35 4 1
1909-10	43 15 8	27 10 1	49 0 4	33 14 10	40 8 2	27 5 1	35 16 1

The average amount deposited per head of population shews a satisfactory increase during the period under review. In 1900-1 it ranged from £10 10s. in South Australia to £5 16s. 9d. in Tasmania, while in 1909-10 the amount in South Australia had risen to £16 5s., and in Tasmania to £8 19s. 3d. Tasmania's average in 1906-7 was higher than that of Queensland, which, nevertheless, rose from £7 15s. 2d. to £8 7s. 6d. during the seven years. The following table gives the figures for each year:—

SAVINGS BANKS DEPOSITS PER HEAD OF POPULATION, 1900-1 to 1909-10.

Year.	N.S.W.			Victoria.			Q'land.			S. Aust.			W. Aust.			Tasmania.			C'wealth.		
	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
1900-1	8	0	3	8	0	6	7	15	2	10	10	0	8	11	3	5	16	9	8	3	0
1901-2	8	11	9	8	7	5	8	1	4	10	19	4	9	2	6	6	5	3	8	12	0
1902-3	8	17	1	8	11	3	7	7	2	11	9	5	8	19	2	6	14	7	8	14	5
1903-4	8	13	0	8	15	6	7	3	11	11	8	6	8	14	9	6	19	3	8	13	8
1904-5	8	18	2	9	0	0	7	7	3	11	15	0	8	15	9	7	0	3	8	18	1
1905-6	9	7	3	9	12	5	7	15	2	12	11	0	8	17	8	7	7	2	9	8	1
1906-7	10	0	8	10	6	10	8	7	6	13	15	0	9	19	3	8	8	4	10	3	8
1907-8	11	3	6	10	13	10	8	18	4	14	2	3	10	17	4	8	13	1	10	18	8
1908-9	11	16	4	10	19	10	9	1	9	15	9	7	11	5	8	8	15	4	11	7	11
1909-10... ...	12	5	3	11	16	2	9	12	7	16	5	0	12	10	10	8	19	3	12	0	3

4. **Annual Business.**—The annual volume of business transacted by the Australian savings banks is very large when compared with the total amount of deposits. This is mainly due to the fact already pointed out of many accounts being used as convenient current accounts. Thus, during the last year of the period under review, the total amount deposited and withdrawn (exclusive of interest added) amounted to about 140 per cent. of the total amount of deposits at the end of the previous year, while the amount at credit of depositors (inclusive of interest added) increased by only 8½ per cent. during the same year. The following table shews the business transacted during the year 1909-10:—

SAVINGS BANKS TRANSACTIONS DURING THE YEAR 1909-10.

State.	Total Deposits at End of Year 1908-9.	Amounts Deposited during Year 1909-10.	Interest Added during Year 1909-10.	Total	Amounts Withdrawn during Year 1909-10.	Total Deposits at End of Year 1909-10.
	£	£	£	£	£	£
N.S. Wales ...	18,805,082	14,188,451	567,511	33,561,044	13,410,470	20,150,574
Victoria ...	14,101,710	11,832,578	413,732	26,348,020	10,930,132	15,417,888
Queensland ...	5,158,219	2,977,874	145,483	8,281,576	2,658,590	5,622,986
South Australia	6,347,271	4,339,909	191,587	10,878,767	4,087,447	6,791,320
West. Australia	3,059,738	2,404,368	90,472	5,554,578	2,072,814	3,481,764
Tasmania ...	1,605,919	863,860	48,780	2,518,559	865,593	1,652,966
Commonwealth	49,077,939	36,607,040	1,457,565	87,142,544	34,025,046	53,117,498

§ 5. Life Assurance.

1. **General.**—Under section 51 of the Commonwealth Constitution Act, the Commonwealth Parliament is empowered to legislate in regard to "insurance, other than State insurance; also State insurance extending beyond the limits of the State concerned." With the exception of Act No. 12 of 1905, "an Act relating to assurance on the lives of children by life assurance companies or societies," no legislation relating to life

insurance has been passed by the Commonwealth Parliament, and life assurance companies carry on their business under State laws where such laws are in existence, or otherwise under the provisions of various companies or special Acts. A Royal Commission consisting of the Honourable J. H. Hood, one of the judges of the Supreme Court of Victoria, and G. H. Knibbs, Esquire, Commonwealth Statistician, was, however, appointed in 1908, "to inquire into and report upon the law relating to and the methods of operating Fire, Life, Industrial, and other Insurance in Australia." The Commission was originally required to report the result of its inquiry before the 30th June, 1909. A progress report was issued before that date, and the time for the final report extended to the 30th June, 1910. The report relating to Life Assurance was published on 15th March, 1910, and that relating to Fire Insurance on 15th October, 1910. On the conclusions contained in these reports future Commonwealth legislation will probably be based. In addition to these a report on Social Insurance was prepared by the Commonwealth Statistician and issued on 9th September, 1910.

Returns for the year 1909 have been directly collected from life assurance societies by the Commonwealth Statistician, with results which are in the main satisfactory. Figures for 1909 refer to business in the Commonwealth only, and do not include New Zealand business.

2. **Companies Transacting Business in the Commonwealth.**—The total number of companies at present established in the Commonwealth is seventeen, of which the following six have their head offices in New South Wales:—The Australian Mutual Provident Society, the Mutual Life and Citizens' Assurance Company Limited, the City Mutual Life Assurance Society Limited, the Standard Life Association Limited, the Australian Metropolitan Life Assurance Company Limited, and the People's Prudential Assurance Company Limited. The Mutual Life and Citizens' Assurance Company Limited was formed in 1908 by the amalgamation of the Mutual Life Association of Australasia and the Citizens' Life Assurance Company Limited. During 1910 it increased in size by amalgamating with the Australian Widows' Fund Life Assurance Society Limited, but separate accounts and statements were issued for the year 1909-10. Six companies have their head offices in Victoria, viz.—The Australian Alliance Assurance Company, the National Mutual Life Association of Australasia Limited, the Australian Widows' Fund Life Assurance Society Limited, the Victoria Life and General Insurance Company, the Colonial Mutual Life Assurance Society Limited, and the Australasian Temperance and General Mutual Life Assurance Society Limited. The head office of the Provident Life Assurance Company is in New Zealand, and that of the Liverpool and London and Globe Insurance Company in England. The remaining three societies belong to the United States, viz.—The Equitable Life Insurance Society of the United States, the Mutual Life Insurance Company of New York, and the New York Life Insurance Company.

Most of the Australian companies are purely mutual; the Victoria Life and General (which takes no new life business), the Mutual Life and Citizens', the Standard, the Metropolitan, and the Prudential, are the only companies which are partly proprietary, the shareholders' capital amounting to £40,000, £56,788, £12,500, £11,740 and £4791 respectively. Of foreign companies transacting business in the Commonwealth, the Liverpool and London and Globe, the Provident, and the Equitable are partly proprietary, the shareholders' capital amounting to £245,640, £10,000 and £20,550 respectively.

3. **Ordinary and Industrial Business.**—Of the societies enumerated in the preceding paragraph the following five in 1909 transacted both ordinary and industrial business:—The Australian Mutual Provident Society, the Mutual Life and Citizens' Assurance Company Limited, the Australasian Temperance and General Mutual Life Assurance Society Limited, the Standard Life Association Limited, the Australian Metropolitan Life Assurance Company Limited, and the Colonial Mutual Life Assurance Society.

The People's Prudential Assurance Company Limited and the Provident Life Assurance Company formerly restricted their operations to industrial business, but have now established an ordinary department.

The remaining nine societies transacted ordinary life assurance business only, with the exception of those companies which have fire and accident branches, etc.

It has been attempted in this section to keep returns relating to ordinary and to industrial business apart, so far as it is possible to do so, and figures relating to companies whose head offices are in New Zealand or in Europe or America refer to the Australian business only of those companies.

4. **Ordinary Business: Australian Business in Force, 1909.**—The subjoined table shews the ordinary life business in force at the latest dates available in the seventeen societies conducting operations in the Commonwealth :—

ORDINARY LIFE ASSURANCE.—AUSTRALIAN BUSINESS IN FORCE, 1909.

Society.	Policies in force, exclusive of Annuities.	Amount Assured, exclusive of Bonus Addition, etc.	Annual Premium Income, exclusive of Annuities.
	No.	£	£
Australian Mutual Provident Society	194,828	53,468,922	1,728,852
Mutual Life and Citizens' Assurance Company Limited ...	65,779	10,950,648	383,607
City Mutual Life Assurance Society	16,449	2,194,889	82,406
Standard Life Association	4,533	576,286	21,549
Australian Metropolitan Life Assurance Company ...	2,304	202,947	9,175
Australian Alliance Assurance Company	578	195,491	5,188
National Mutual Life Association of Australasia	61,780	13,505,647	644,217
Australian Widows' Fund Life Assurance Society ...	23,755	4,957,238	169,241
Victoria Life and General Insurance Company	151	72,800	2,067
Colonial Mutual Life Assurance Society	17,864	3,730,784	125,667
People's Prudential	2,396	119.390	17,848*
Australasian Temperance & General Mutual Life Assurance Society	31,419	3,179,267	115,972
Liverpool and London and Globe Insurance Company (Life Branch)	352	166,341	4,944
Provident Life	29	6,403	169
Equitable Life Assurance Society of United States ...	7,084	2,486,757	103,210
Mutual Life Insurance Company of New York	4,238	1,669,522	58,478
New York Life Insurance Company	5,956	2,281,704	81,454

* Including industrial.

5. **Industrial Business: Australian Business in Force, 1909.**— Similar information in regard to the industrial business of the eight societies transacting that kind of business is given in the following table :—

INDUSTRIAL LIFE ASSURANCE.—AUSTRALIAN BUSINESS IN FORCE, 1909.

Society.	Policies in Force.	Amount Assured.	Annual Premium Income.
	No.	£	£
Australian Mutual Provident Society	36,739	1,142,101	60,575
Mutual Life and Citizens' Assurance Company	194,338	3,700,590	177,020
Standard Life Association	23,585	640,816	26,195
Australian Metropolitan Life Assurance Company ...	14,957	308,419	17,468
Colonial Mutual Life Assurance Society	8,915	237,479	3,370
People's Prudential Assurance Company	4,845	108,900	*
Aust. Temperance and General Mutual Life Ass. Society	102,497	2,039,583	122,926
Provident Life Assurance Company	2,901	69,979	2,725

* Included in ordinary.

6. **Receipts and Expenditure of Insurance Societies, 1909.**—(i.) *Ordinary Business.* The following returns refer to the Australian business of all societies doing business in the Commonwealth. The People's Prudential Assurance Company, whose accounts do not distinguish between revenue and expenditure on account of ordinary and industrial business, has been included among the companies doing industrial business.

ORDINARY LIFE ASSURANCE.—AUSTRALIAN RECEIPTS AND EXPENDITURE, 1909.

Society.	Receipts.	Expenditure.	Excess Receipts (Addition to Funds).
	£	£	£
Australian Mutual Provident Society	2,707,483	1,810,751	896,732
Mutual Life and Citizens' Assurance Company ...	537,989	302,641	235,348
City Mutual Life Assurance Society	106,965	67,670	39,295
Standard Life Association	22,463	17,127	5,336
Australian Metropolitan Life Assurance Company ...	9,655	6,331	3,324
Australian Alliance Assurance Company	25,940	43,751	17,811*
National Mutual Life Association of Australasia ...	880,052	433,586	446,466
Australian Widows' Fund Life Assurance Society ...	254,290	227,693	26,597
Victoria Life and General Insurance Company ...	10,868	19,161	8,293*
Colonial Mutual Life Assurance Society	217,018	231,479	14,461*
Aust. Temperance & General Mutual Life Ass. Socy.	139,567	84,835	54,732
Liverpool and London and Globe (Life Branch) ...	4,944	16,178	11,234*
Provident Life	169	76	93
Equitable Life Assurance Society	126,138	165,682	39,544*
Mutual Life Insurance Company of New York ...	77,256	82,545	5,289*
New York Life Insurance Company	87,258	66,029	21,229

* Decrease.

(ii.) *Industrial Business.* A similar return for those societies which transact industrial business is given below. The figures for the Prudential, as stated above, are included therein.

INDUSTRIAL LIFE ASSURANCE.—AUSTRALIAN RECEIPTS AND EXPENDITURE, 1909.

Society.	Receipts.	Expenditure.	Excess Receipts (Addition to Funds)
	£	£	£
Australian Mutual Provident Society	62,231	36,621	25,610
Mutual Life and Citizens' Assurance Company ...	206,015	159,815	46,200
Standard Life Association	27,710	36,511	8,801*
Australian Metropolitan Life Assurance Company	33,918	19,606	14,312
Colonial Mutual	19,082	3,336	15,746
People's Prudential Assurance Company	18,645	15,794	2,851
Aust. Temperance & General Mutual Life Ass. Soc.	134,420	93,242	41,178
Provident Life Assurance Company	2,762	4,151	1,389*

* Decrease.

7. **Expenses of Management of Insurance Societies, 1909.**—(i.) *Ordinary Business.* In the following table the expenses of management (including commission, expenses of management, license fees, and taxes) of the several societies transacting ordinary life

business are shewn, together with the proportion these expenses bear to premium income and to gross receipts. The People's Prudential Company is included amongst the industrial companies in a subsequent table, as that company transacts mainly industrial business, and as its returns include both ordinary and industrial business.

ORDINARY LIFE ASSURANCE.—EXPENSES OF MANAGEMENT IN AUSTRALIA, 1909.

Society.	Expenses of Management.	Proportion to Premium Receipts.	Proportion to Gross Receipts.
	£	%	%
Australian Mutual Provident Society	225,742	13.06	8.34
Mutual Life and Citizens' Assurance Company ...	42,344	11.04	7.87
City Mutual Life Assurance Society	26,555	32.22	24.83
Standard Life Association	14,293	66.33	63.63
Australian Metropolitan Life Assurance Company ...	3,977	43.35	41.19
Australian Alliance Assurance Company	2,865	55.22	11.04
National Mutual Life Association of Australasia ...	67,956	10.55	7.72
Australian Widows' Fund Life Assurance Society ...	44,078	26.04	17.33
Victoria Life and General Insurance Company ...	1,286	62.20	11.83
Colonial Mutual Life Assurance Society	42,472	33.80	19.57
Australasian Temperance & General Mutual Life Assurance Society	34,857	30.06	24.98
Liverpool and London and Globe (Life Branch) ...	*	*	*
Provident Life	76	44.97	44.97
Equitable Life Assurance Company	4,603	4.46	3.65
Mutual Life Insurance Society of New York	4,883	8.35	6.32
New York Life Insurance Society	6,881	8.45	7.89

* Not available.

(ii.) *Industrial Business.* The Australasian assurance societies have, in common with assurance societies elsewhere, made the experience that industrial business is much more expensive than ordinary business. This is, of course, principally due to the great expenses in connection with collection and commission. The subjoined table shews particulars in regard to this business, the figures again including commission, expenses of management, license fees, and taxes:—

INDUSTRIAL LIFE ASSURANCE.—EXPENSES OF MANAGEMENT IN AUSTRALIA, 1909.

Society.	Expenses of Management.	Proportion to Premium Receipts.	Proportion to Gross Receipts.
	£	%	%
Australian Mutual Provident Society	34,281	56.59	55.09
Mutual Life and Citizens' Assurance Company ...	83,710	47.29	40.63
Standard Life Association	21,400	81.69	77.23
Australian Metropolitan Life Assurance Company ...	13,695	78.40	40.38
Colonial Mutual	3,298	97.86	17.28
People's Prudential Assurance Company*	8,137	45.59	43.64
Aust. Temperance & General Mutual Life Ass. Socy.	50,198	40.84	37.34
Provident Life Assurance Company	2,587	94.94	93.66

* Including ordinary business.

8. **Liabilities and Assets of Insurance Societies, 1909.**—The liabilities of the Australasian societies consist mainly of their assurance funds; as already mentioned, only six of the societies are partly proprietary, viz., the Mutual Life and Citizens', with a paid-up capital of £56,788; the Standard, with a paid-up capital of £12,500; the Metropolitan, with a paid-up capital of £11,740; the Prudential, with a paid-up capital of £4791; the Victoria Life and General, with a paid-up capital of £40,000; and the Provident, with a paid-up capital of £10,000. With the exception of the Victoria Life and General, this paid-up capital belongs in every case to the industrial branch of the respective societies. The capital of the Provident (£10,000) is held in New Zealand, that of the Liverpool and London and Globe (£245,640) in England, and that of the Equitable Life (£20,550) in the United States. Neither of these three amounts appears, therefore, in the two subjoined tables where the capital of the Australian societies is included with the assurance funds. The assets consist mainly in loans on mortgage and policies, in Government, municipal, and similar securities, shares, freehold property, etc. Loans on personal security are only granted by very few of the Australian societies.

(i.) *Ordinary Business.* The following table shews the liabilities and assets of the societies transacting ordinary life business:—

ORDINARY LIFE ASSURANCE.—AUSTRALIAN LIABILITIES AND ASSETS, 1909.

Society	Liabilities.			Assets.		
	Total Funds including Paid-up Capital.	Other Liabilities.	Total.	Loans on Mortgages and Policies.	Securities, Freehold Property, etc.	Total
	£	£	£	£	£	£
Australian Mutual Provident Society* ...	20,831,157	329,441	21,160,598	11,489,643	7,585,948	19,075,591
Mutual Life and Citizens' Assurance Co. ...	3,107,055	29,131	3,136,186	1,385,481	2,367,935	3,753,416
City Mutual Life Assurance Society ...	430,872	3,221	434,093	242,362	191,731	434,093
Standard Life Association...	27,598	1,608	29,206	1,140	28,066	29,206
Australian Metropolitan Life Assurance Co.	22,108	422	22,530	1,127	21,403	22,530
Australasian Alliance Assurance Company	181,741	11,472	193,213	116,276	76,937	193,213
National Mut. Life Assoc of Australasia ...	4,851,154	80,435	4,931,589	3,265,959	1,665,630	4,931,589
Aust. Widows' Fund Life Assur. Society ...	1,828,170	17,468	1,845,638	1,446,748	398,891	1,845,639
Victoria Life and General Insurance Co. ...	225,915	12,930	238,845	104.195	134,374	238,569
Colonial Mutual Life Assurance Society ...	2,353,432	6,477.	2,359,909	1,332,387	1,027,522	2,359,909
Aust. Temp. & Gen. Mut. Life Assur. Soc *	820,174	5,746	825,920	296,519	529,401	825,920
Liverpool & London & Globe (Life Branch)	†	†	†	†	†	†
Provident Life	62	...	62	...	62	62
Equitable Life Assurance Society	294,996	155	295,151	129,775	443,058	572,833
Mutual Life Insurance Society of New York	†	†	†	82,707	180,395	263,102
New York Life Insurance Society	733,000	5,250	738,250	90.368	27,892	118,260

* Including industrial business. As the business of these two societies is mainly ordinary life business they have been included in this table. † Not available.

(ii.) *Industrial Business.* As stated in the footnote to the preceding table, the Australian Mutual Provident Society and the Australasian Temperance and General Mutual Life Assurance Society, which transact a certain amount of industrial business, but whose business is mainly ordinary life business, have been included with those societies doing only ordinary life business. On the other hand, the People's Prudential Assurance Company, in whose case industrial business greatly predominates over ordinary life business, has been included in the following table. Incomplete as the table is, it shews that the funds appropriated to industrial business are very insignificant in comparison with those pertaining to ordinary life business. Taking the table in conjunction with the statements of revenue and expenditure, the question may well be asked whether in the case of some of the societies industrial business is worth catering for at all.

INDUSTRIAL LIFE ASSURANCE.—AUSTRALIAN LIABILITIES AND ASSETS, 1909.

Society.	Liabilities.			Assets.		
	Total Funds, including Paid-up Capital.	Other Liabilities.	Total.	Loans on Mortgages and Policies.	Securities, Freehold Property, etc.	Total.
	£	£	£	£	£	£
Mutual Life & Citizens' Assurance Company	717,142	22,755	739,897	303,021	475,129	778,150
Standard Life Association	23,105	19,500	42,605	2,295	40,310	42,605
Australian Metropolitan Life Assurance Co.	37,610	15,816	53,426	541	52,885	53,426
Colonial Mutual	145	15,600	15,745	...	...	15,745
People's Prudential Assurance Company*...	21,533	160	21,693	8,381	13,312	21,693
Provident Life Assurance Company ...	4,441	...	4,441	...	5,231	5,231

* Including ordinary business.

(iii.) *Total Liabilities and Assets.* It has been thought advisable to confine the figures relating to life assurance to business in the Commonwealth. Several of the companies whose head offices are in Australia transact, however, a large amount of business elsewhere, viz., in New Zealand, in South Africa, and in the United Kingdom, while in the case of the foreign companies, the Australian business is insignificant compared with that done elsewhere. Particulars as to this foreign business of both Australian and foreign companies will be found in "Finance Bulletin, No. 4," and a short table only is inserted here, shewing the total liabilities and assets (which balance in every case) of the various companies, so that the deficiencies in the Australian assets shewn in the previous tables for those companies doing business elsewhere may not be misunderstood:—

TOTAL LIABILITIES AND ASSETS OF INSURANCE COMPANIES, 1909.

Society.	Liabilities and Assets.	Society.	Liabilities and Assets.
ORDINARY BUSINESS.	£		£
*Australian Mutual Provident Soc. ...	26,087,089	Liverpool & London & Globe (Life)...	11,638,453
Mutual Life and Citizens' Assur. Co.	4,083,199	Provident Life	10,971
City Mutual Life Assurance Society...	434,093	Equitable Life Assurance Society ...	99,252,982
Standard Life Association	29,206	Mutual Life Ins. Society of New York	115,014,860
Aust. Metropolitan Life Assur. Co. ...	22,530	New York Life Insurance Society ...	123,245,910
Australian Alliance Assurance Co. ...	193,213	INDUSTRIAL BUSINESS.	
National Mutual Life Association ...	6,040,936	Mutual Life and Citizens' Assur. Co.	820,846
Australian Widows' Fund	1,957,392	Standard Life Association	42,605
Victoria Life and General Insur. Co.	238,845	Aust. Metropolitan Life Assur. Co....	53,426
Colonial Mutual Life Assurance Soc.	3,117,515	†People's Prudential Assurance Co.	21,693
*Aust. Temp. & Gen. Mut. Life A. Soc.	891,451	Provident Life Assurance Company	38,667

* Including industrial business. † Including ordinary business.

§ 6. Fire Insurance.

1. **General.**—Returns as to fire insurance are very defective, and only for Sydney and Melbourne and the country districts of Victoria have some figures been given which are worth reproducing. The Royal Commission mentioned above under "Life Assurance" is inquiring into fire insurance matters, and Commonwealth legislation may, therefore, be expected at an early date.

2. **Sydney.**—Under the Fire Brigades Act 1902 the cost of the Metropolitan Fire Brigade is defrayed by equal payments on the part of the Colonial Treasurer, the municipal councils within the area under the jurisdiction of the Fire Brigades Board, and the insurance companies represented in Sydney. The companies divide their share proportionately to the amount held at risk. Under this arrangement the amount payable by the companies for the year 1909 was £19,100, divided amongst sixty-five companies, of which not more than six had their head office in Sydney. The amounts thus held at

risk at the close of the last four years for which returns are available were, in 1905, £78,108,749; in 1906, £81,364,129; in 1907, £86,563,304; and in 1908, £89,971,992. A new Act, coming into force on the 1st January, 1910, was passed in 1909. This Act substitutes a Board of Fire Commissioners for New South Wales for the present Metropolitan Fire Brigades Board, and divides the whole State into eight fire districts for the greater facilitation of working.

3. **Melbourne.**—In Melbourne the Metropolitan Fire Brigades Board assesses the amount payable by the insurance companies on the amount of premiums returned. These premiums for the last four years averaged about £300,000 per annum, while the contributions paid by the companies amounted to about £13,000, or about £4 6s. 8d. for every £100 of premiums. It may be said, therefore, that the companies have to devote about 4⅓ per cent. of their premium income from metropolitan insurances to the maintenance of the fire brigade.

The annual value of ratable property is nearly £5,000,000, and the amounts contributed by the municipalities—as in the case of the insurance companies, one-third of the amount required by the Fire Brigades Board, the remaining one-third being contributed by the State Treasurer—are equal to about ¾d. per £1 of ratable value. In addition to this contribution insurance companies doing business in Victoria have to take out an annual license at a cost of 1½ per cent. of their gross premium income, which is probably equal to about 1⅞ per cent. on net income.

4. **Country Districts of Victoria.**—The country districts are divided into nine areas for fire insurance purposes, and the contributions to be paid vary in these areas according to the actual requirements of the Country Fire Brigades Board. The annual values of ratable property for the last four years were slightly under £1,500,000. The premium income of the insurance companies from country business during the same period averaged about £150,000, and the contributions of the companies £3700, equal to nearly 2½ per cent. of the premium income.

5. **Brisbane.**—A similar arrangement holds good in Brisbane, under which the cost of the Fire Brigade Board, amounting to about £6000 per annum, is paid in equal shares by the Government, the Brisbane City Council, and the insurance companies.

6. **Adelaide.**—The Fire Brigades' Board of South Australia is incorporated under "The Fire Brigades Act 1904"; "The Fire Brigades Act Amendment Act 1905"; and "The Fire Brigades Act Further Amendment Act 1910." The cost is distributed as follows:—Three-ninths to the Government; four-ninths to the insurance companies; and two-ninths to the municipalities and districts which come under the operations of the board. The insurance companies are assessed in proportion to that portion of their premium incomes derived from the insurance of property (re-insurance within the State excepted) situated within the limits of the municipalities and districts coming under the operations of the board. The respective contributions for 1910 were as follows:—The Government, £6012; the companies, £8016; the municipalities, £4008.

7. **Perth.**—A District Fire Brigades' Bill was reported on by a committee of the Legislative Assembly during 1909, and it was recommended that all brigades should in future be controlled by one board, and that the expense should be met by contributions at the following rate:—By Government, two eighths; by the municipalities, three eighths; and by the Insurance companies, three eighths. These provisions were incorporated in an Act, "The District Fire Brigades Act 1909," which was assented to on 21st December, 1909, and came into force on the 1st day of January, 1909. This Act, however, does not apply to Perth or the other districts in which the Fire Brigades Act 1898 is still operative. According to the provisions of the latter Act the expenditure is allocated as follows:—One-ninth to the Government; four-ninths to the insurance companies; and four-ninths to the municipalities. It is provided that the Governor may, at any time, on the petition of the council of any municipality, declare by proclamation that the provisions of the Act of 1898 shall cease to be in force in that municipal district.

8. **Australian Insurance Business.**—Returns are available shewing the revenue and expenditure, assets and liabilities, and investments of sixteen insurance companies

having their head offices either in the Commonwealth or in New Zealand. These companies are:—(*a*) with head-office in Sydney—the Australian Mutual Fire Insurance Company, the City Mutual Fire Insurance Company, the Mercantile Mutual Fire Insurance Company, the Queensland Insurance Company Limited, and the United Insurance Company; (*b*) with head office in Melbourne—the Australian Alliance Assurance Company, the Colonial Mutual Fire Insurance Company, the Commonwealth Insurance Company Limited, the Victoria Insurance Company, and the Victoria General Insurance and Guarantee Company Limited; (*c*) with head-office in Hobart—the Derwent and Tamar Fire and Marine Assurance Company Limited; (*d*) with head-office in Launceston—the Mutual Fire Insurance Company of Tasmania; (*e*) with head-office in Auckland—the New Zealand Insurance Company, and the South British Fire and Marine Insurance Company of New Zealand; and (*f*) with head-office in Dunedin—the National Fire and Marine Insurance Company of New Zealand, and the Standard Fire and Marine Insurance Company of New Zealand. As their names imply, the majority of these companies transact marine insurance and in some cases guarantee and other business in addition to fire insurance business, and the returns relating to the latter cannot be separated from the former.

The accounts cover two periods of one year, the second year ending at various dates from 30th June, 1909, to 31st March, 1910. The figures for the first year are put in brackets.

The premiums, less reinsurances and returns, amounted to £1,799,303 (£1,795,366); losses were £1,064,464 (£1,044,154). Expenses and commission came to £603,572 (£590,689), and there was, therefore, a profit on trade operations of £131,267 (£160,523). As, however, interest, rent, fees, etc., amounted to £147,803 (£137,323), the total profit was £279,070 (£297,846). Dividends and bonuses came to £175,179 (£179,191). The ratio to premium income of losses was, therefore, 59.16 per cent. (58.16 per cent.), ranging from 26 per cent. to 88.59 per cent.; and of expenses and commissions, 33.54 per cent. (32.90 per cent.). The resulting ratio of trade surplus to premium income was 7.30 per cent. (8.94 per cent.)

The paid-up capital of the sixteen companies was £1,295,347 (£1,295,347); reserve and reinsurance funds, £2,041,435 (£2,000,262); undivided profits, £150,346 (£143,470). The total paid-up capital and reserves were, therefore, £3,487,128 (£3,439,079). In addition to these liabilities there were others, viz.:—Unsettled losses, £183,940 (£229,818); sundry creditors, £126,853 (£110,626); dividend to pay, £115,672 (£127,371); and, in the case of one company, a life assurance fund, £181,741 (£199,551), thus bringing the total liabilities to shareholders and to the general public up to £4,095,334 (£4,106,445).

The corresponding amount of assets is made up of investments, £3,556,645 (£3,553,959), viz.:—Loans on mortgage, £1,097,196 (£939,932); Government securities, debentures, shares, etc., £1,016,244 (£1,015,440); landed and other property, including furniture, £763,931 (£760,267); fixed deposits, £577,751 (£578,984); in the case of one company doing a mixed business—loans on its own life policies, etc., £15,338 (£17,730); other investments, £86,185 (£241,606). The balance of assets consisted of cash in bank, on hand, and bills receivable, £171,082 (£186,906); and sundry debtors, etc., £367,607 (£365,580).

The financial position of the companies is undoubtedly a strong one, owing to the steady accumulation of reserves, and the high ratio borne by capital and reserves to premium income must be a cause of satisfaction to policyholders.

7. Marine Insurance.

No returns are available in regard to Marine Insurance. It may, however, be stated that the Commonwealth Parliament in 1909 passed an Act (No. 11 of 1909, An Act relating to Marine Insurance), which was assented to on the 11th November, 1909. This Act materially alters some of the conditions under which marine policies have heretofore been issued.

§ 8. Friendly Societies.

1. **General.**—Friendly societies are an important factor in the social life of the community, as probably nearly one-third of the total population of the Commonwealth comes either directly or indirectly under their influence. Their total membership is nearly 380,000, but as certain benefits, such as medical attendance and free medicine and in many cases funeral expenses, are granted to members' families as well as to members themselves, this figure must, even when due allowance is made for young and unmarried members, be multiplied by four at the least to arrive at the total number of persons more or less connected with these societies. Legislation has conferred certain privileges on friendly societies, but, on the other hand, it insists on their registration, and it is the duty of the Registrars in the various States, prior to registering a new society, to see that its rules are conformable to the law, and that the scale of contributions is sufficiently high to enable the promised benefits to be conferred on members. Societies are obliged to forward annual returns as to their membership and their finances to the Registrar, and elaborate reports are published in most of the States dealing with the returns thus received.

In the following tables the figures refer to the year 1909, except those for South Australia, which refer to 1906.

2. **Number of Societies, Lodges, and Members.**—The total number of societies registered in New South Wales is 67; in Victoria, 48; in Queensland, 17; in South Australia, 16; in Western Australia, 17; and in Tasmania, 11. No total is given of these figures for the Commonwealth, as the societies shewn in one State are in most cases represented in all the other States. The number of different lodges, the total number of benefit members at the end of the year, and their average number during the year are shewn in the following table:—

FRIENDLY SOCIETIES.—LODGES AND MEMBERS, 31st DECEMBER, 1909.*

State.	Number of Lodges.	Benefit Members at End of Year.	Average No. of Benefit Members during Year.
New South Wales	1,492	113,216	109,039
Victoria	1,441	136,340	133,194
Queensland	464	39,871	38,796
South Australia	506	52,165	51,226
Western Australia	260	16,044	16,071
Tasmania	168	20,141	19,548
Commonwealth	4,331	377,777	367,874

* See, however, paragraph 1, above.

3. **Sickness and Death.**—Sick pay is generally granted for a number of months at full rates, then for a period at half rates, and in some societies is finally reduced to quarter rates. The following table shews the total number of members who received sick pay during the year, the number of weeks for which they received pay in the

aggregate, and the average per member sick, and further the number of benefit members who died during the year, together with the proportion of deaths per thousand average members:—

FRIENDLY SOCIETIES.—SICKNESS AND DEATH, 1909.*

State.	Number of Members who received Sick Pay.	Total Number of weeks Sick Pay granted.	Average No. of weeks per Member sick.	Deaths of Benefit Members and Wives.	Proportion of Deaths to 1000 average Benefit Members.
New South Wales	21,701	135,869	6.26	838	7.69
Victoria	24,158	199,150	8.24	1,634	12.27
Queensland ...	6,500	38,101	5.86	258	6.65
South Australia ...	8,851	84,707	9.57	698	13.63
Western Australia	2,321	12,347	5.32	120	7.47
Tasmania ...	3,935	20,962	5.33	128	6.70
Commonwealth	67,466	491,136	7.28	3,676	9.99

* See, however, paragraph 1.

4. **Revenue and Expenditure.**—The financial returns are not made up in the same way in each State, but an attempt has been made in the subjoined table to group the revenue under the main headings:—

FRIENDLY SOCIETIES.—REVENUE, 1909.*

State.	Entrance Fees.	Members' Contributions.	Levies.	Interest, Dividends, and Rents.	All other Income.	Total Revenue.
	£	£	£	£	£	£
New South Wales	2,985	349,487	...	50,500	52,552	455,524
Victoria ...	2,854	385,251	†	77,037	58,729	523,871
Queensland ...	†	129,484	†	17,756	†	147,240
South Australia ...	1,535	122,643	§	29,464	‡59,227	212,869
Western Australia	1,273	44,470	957	7,017	35,875	89,592
Tasmania ...	1,144	61,660	†	5,842	8,523	77,169
Commonwealth		1,103,743		187,616	214,906	1,506,265

* See, however, paragraph 1. † Included under "Members' contributions." ‡ Including Levies. § Included under "All other income."

The returns relating to expenditure are more complete than those relating to revenue, and can be shewn in full for every State. The figures shew that the excess of revenue, amounting in the aggregate to £290,935, was divided amongst the six States as follows:—New South Wales, £77,356; Victoria, £124,526; Queensland, £42,445; South Australia, £23,101; Western Australia, £12,829; and Tasmania, £10,678. The revenue exceeded the expenditure by about sixteen shillings per average benefit member, a margin which cannot be called very large.

FRIENDLY SOCIETIES: EXPENDITURE, 1909.*

State.	Sick Pay.	Medical Attendance and Medicine.	Sums Paid at Death of Members & Members' Wives.	Administration.	All other Expenditure.	Total Expenditure.
	£	£	£	£	£	£
New South Wales	105,832	122,327	25,706	49,831	74,472	378,168
Victoria ...	134,078	137,455	29,105	66,680	32,027	399,345
Queensland ...	28,577	44,552	10,273	21,393	†	104,795
South Australia ...	49,370	27,130	24,325	33,545	55,398	189,768
Western Australia	10,331	18,266	1,732	11,572	34,862	76,763
Tasmania ...	17,535	17,402	8,463	8,393	14,698	66,491
Commonwealth	345,723	367,132	99,604	191,414	211,457	1,215,330

* See, however, paragraph 1. † Included in "Administration."

It appears from the above figures that sick pay averaged about fourteen shillings and twopence per week, but, as the returns include pay at half and quarter rates, and as the proportion of these to full rates is not stated, the average given must be taken for what it is worth. Medical attendance and medicine came to twenty shillings per average benefit member, or to nearly £5 10s. per member who received sick pay during the year. Funeral expenses averaged £27 1s. 11d. per death of a member or wife of a member during the year, but this average also must be taken for what it is worth, as the funeral expenses allowed in the case of the death of a member are generally much higher than those allowed in the case of the death of a member's wife.

5. **Funds.**—The two foregoing tables shew that the surplus of revenue over expenditure amounted to £290,935 for the year, and a small surplus must, of course, result annually in every society which levies adequate contributions to enable it to meet all possible claims. These accumulations of profits are generally invested, and the subjoined table shews for all of the six States the division into invested and uninvested funds :—

FRIENDLY SOCIETIES: FUNDS, 31st DECEMBER, 1909.*

State.	Invested Funds.	Uninvested Funds.	Total Funds.
	£	£	£
New South Wales	1,273,464	61,915	1,335,379
Victoria	1,922,824	89,593	2,012,417
Queensland	478,947	24,865	503,812
South Australia	714,719	29,076	743,795
Western Australia	132,782	14,404	147,186
Tasmania...	178,061	10,448	188,509
Commonwealth	4,700,797	230,301	4,931,098

* See, however, paragraph 1.

The total funds amounted, therefore, to £13 1s. per member at the close of the year under review.

§ 9. Probates.

1. **Number of Probates and Letters of Administration and Value of Estates.**—The value of the estates left by deceased persons gives a fair view of the distribution of property among the general population. There occurred in 1909 the deaths of 30,542 adult persons, while the total number of probates and letters of administration granted during the same period was 9822. It would therefore appear that about one in every three adults who died during the year was possessed of sufficient property to necessitate the taking out of probate. The details for each State are shewn in the table hereunder:—

PROBATES AND LETTERS OF ADMINISTRATION, 1909.

State.	Number of Estates.			Value of Estates.		
	Probates.	Letters of Administration.	Total.	Probate.	Letters of Administration.	Total.
				£	£	£
New South Wales	2,104	1,081	3,185	10,295,793	846,275	11,142,068
Victoria ...	2,859	1,210	4,069	6,480,376	*	6,480,376
Queensland ...	467	212	679	1,176,076	332,807	1,508,883
South Australia ...	913	202	1,115	1,863,480	76,029	1,939,509
Western Australia	231	182	413	833,423	105,895	939,318
Tasmania ...	278	83	361	613,153	108,858	722,011
Commonwealth	6,852	2,970	9,822	21,262,301	1,469,864	22,732,165

* Included with Probates.

In addition to the foregoing, intestate estates to the value of £115,526 were placed under the control of the curator during the year, and £24,591 unclaimed money paid into Consolidated revenue. The details for each State are shewn hereunder:—

INTESTATE ESTATES, 1909.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wlth.
Intestate estates placed under control of curator during 1909							
Number	598	253	572	149	275	95	1,942
Value ... £	49,895	16,350	18,500	18,937	11,844	...	115,526
Unclaimed money paid into consolidated revenue by curator during 1909 ... £	11,289	6,539	4,842	655	1,101	165	24,591

This would make the average value of each estate £2314, and the average value of property left by each adult who died in 1909, £744.

2. **Private Wealth.**—The probate figures have sometimes been used as a means for estimating the private wealth of a country. There are, however, many reasons why no reliance can be placed on such estimates. Generally, estates under a certain minimum value do not require to pass through the probate office. Settlements and deeds of gift, although liable to probate duty, occasionally evade detection. The falling in of several, or even of one very large estate, may vitiate the figures not only of one year but of a series of years. All these errors can, however, be more or less guarded against, while the assumption that each adult living is possessed of the same average amount of property as each adult who died during the year or during a series of years, an assumption on which the whole calculation is based, remains. But as it is certain that the accumulated wealth of an individual generally advances with age, and is probably in most cases greater at death than at any previous period, it will be seen that the results obtained by such a calculation must be unduly inflated. If the calculation were made for the Commonwealth and based on the figures of 1909 it would shew the average property of each adult to be £744, and of the 2,320,000 adults, which were approximately included in the population of the Commonwealth at the end of 1909, about £1,725,000,000, an estimate probably considerably in excess of the truth.

SECTION XXII.

PUBLIC INSTRUCTION.

§ 1. Evolution of Primary Education in Australia.

1. **Primary Systems of the States.**—(i.) *Place of New South Wales in Australian Education.* The first settlement in Australia being in New South Wales, it is but natural that Australian education should have had its beginnings in that State. In the evolution of educational method and system in Australia, New South Wales also has played a leading part, and has had practically a dominating influence. For that reason an account of the evolution of education in this State contains, as it were, the key to the understanding of the Australian attitude to this question. The subject is dealt with in some detail in No. I. and No. II. issues of the Commonwealth Official Year Book, but it is not proposed to repeat it in the present volume.

(ii.) *Primary Systems of other Commonwealth States.* A more or less detailed account of the origin and development of the primary educational systems of the other States also appears in No. I. and No. II. issues of the Year Book.

(iii.) *Present Position of Primary Education in Australia.* Throughout Australia primary education is compulsory and free, while there exists in most of the States a liberal provision of scholarships and bursaries to the higher State Schools, to the Secondary Schools, and to the Universities.[1] Generally speaking, the primary system is fairly well developed. Considerable interest is taken in educational matters by the people of the Commonwealth, and within the last few years the States of New South Wales and Victoria have sent qualified representatives to inspect and report on the methods adopted in the chief countries of Europe and America. The reports of these Commissioners have been widely studied, and various improvements have been made in accordance with their recommendations. The orientation, lighting, and ventilation of school buildings are being modernised. In all of the States periodical medical inspection of the children is in force. (A detailed statement of the work being done in this direction will be found in the chapter dealing with Public Hygiene.) Methods of training teachers are being developed on up-to-date lines, although the "pupil teacher" is still in existence in all the States. Instruction generally has been greatly improved. There has been a wider employment of kindergarten principles in the early stages, and the more or less purely abstract teaching of the older days has been largely replaced by concrete methods. Such subjects as nature study, manual training, and drawing have received a general impetus. Lastly, the system of inspection has been considerably remodelled. Under the old system, the inspector was little more than an examining officer, but, under the present régime the primary duty of these officers consists in guiding and directing the teaching in accordance with approved methods.

(iv.) *Co-ordination of Educational Activities.* Although as pointed out in (iii.) the primary systems may be considered as fairly well organised, there is still need for a

1. Universities have been in existence for some time in New South Wales, Victoria, South Australia, and Tasmania. The University of Queensland was opened in March, 1911, and a University will shortly be founded in Western Australia.

more effective co-ordination of the entire educational activities of the States. At the present time, the brighter pupils from the State Schools may, through the medium of an excellent scheme of scholarships and bursaries, gain entrance to the secondary schools and to the Universities, but the average boy or girl simply leaves the State School at the age of fourteen or thereabouts, and the State apparently no longer concerns itself with them. A small proportion attends evening schools or technical classes, others persevere in private study, but it is to be feared that many make no further attempt at progress. This condition of affairs has been recognised, and efforts have been made to meet it by providing additional evening schools, extending the facilities for technical instruction, arranging for University extension lectures, etc. It may be noted further, that, while the bulk of the primary education, and the whole of the University education is under the control of the State, intermediate secondary education is largely in private hands. There are, of course, some excellent State higher schools, together with semi-private subsidised grammar schools, but a fully co-ordinated scheme of public education has yet to be created. The various Departments of Public Instruction are virtually departments controlling primary education, though they are associated more or less with the Universities and with technical education.

§ 2. State Schools.

1. **Introductory.**—The State schools, or, as they are sometimes termed, the "public" schools, of the Commonwealth comprise all schools directly under State control, in contradistinction to the so-called "private" schools, the bulk of which, though privately managed, nevertheless cater for all classes of the community.

2. **Enrolment and Attendance.**—The following table shews the number of State Schools, together with the teachers employed and the enrolment and "average attendance" in each State during the year 1909:—

STATE SCHOOLS, TEACHERS, AND SCHOLARS, 1909.

(COMMONWEALTH.)

State.	Schools.	Teachers.*	Enrolment.	Average Attendance.
New South Wales	3,075	5,431	218,248	160,080
Victoria	2,035	4,868	205,278	146,106
Queensland	1,141	2,521	88,865	69,755
South Australia	722	1,294	53,748	38,255
Western Australia	434	954	31,341	26,673
Tasmania	380	720	26,756	17,391
Commonwealth	7,787	15,788	624,236	458,260

* Exclusive of sewing mistresses.

Unfortunately, the schemes of enrolment and of the computation of "average attendance" are not identical in each State, so that the comparisons are imperfect. That the educational statistics of each State of the Commonwealth should be made up in the same way is much to be desired.

The enrolment and average attendance at the State Schools in the Commonwealth are given below for the year 1891, and for each year of the period 1899 to 1909:—

ENROLMENT AND ATTENDANCE AT STATE SCHOOLS, 1891 to 1909.

(COMMONWEALTH.)

Year.	Total Population.[1]	Enrolment.	Average Attendance.	Year.	Total Population.[1]	Enrolment.	Average Attendance.
1891	3,240	561,153	350,773	1904	3,984	625,594	445,709
1899	3,716	608,431	424,214	1905	4,052	621,534	442,808
1900	3,765	623,707	441,924	1906	4,119	609,592	442,440
1901	3,826	638,478	450,246	1907	4,197	611,990	444,001
1902	3,883	636,888	455,482	1908	4,275	618,836	446,146
1903	3,927	629,269	446,539	1909	4,374	624,236	458,260

1. In thousands.

It will be seen from the above table that, despite the increase of population, the official figures of enrolment and average attendance at the State Schools of the Commonwealth shew unsatisfactory results although an upward tendency is evident in the figures for 1909. An examination of the graphs on pages 230 to 232, shewing birth-rate, will make it apparent that this is at least in part due to the diminished birth-rate of past years.

3. **Births and School Attendance.**—The table below gives the total births in each State and in the Commonwealth during each of the eight-year periods 1890-97, 1891-98, 1892-99, 1893-1900, 1894-1901, 1895-1902, 1896-1903, and the average attendance at State Schools for each year from 1903 to 1909:—

COMPARISON OF BIRTHS AND SCHOOL ATTENDANCE.

(COMMONWEALTH.)

Year.	New South Wales.	Victoria.	Q'land.	South Australia.	Western Australia.	Tasmania.	Commonwealth.
			TOTAL BIRTHS.				
1890-97 ...	310,279	281,918	116,600	83,038	18,606	38,894	849,365
1891-98	307,541	274,512	115,126	81,674	22,013	38,661	839,527
1892-99 ...	304,544	267,015	114,310	80,344	25,401	38,364	829,978
1893-1900	301,649	259,963	114,208	78,951	29,007	38,263	822,041
1894-1901	299,182	254,419	114,117	77,356	32,613	37,977	815,664
1895-1902	298,066	250,622	114,356	75,804	36,722	38,210	813,780
1896-1903	295,258	246,485	112,103	73,745	41,048	38,500	807,139
			ATTENDANCE AT STATE SCHOOLS.				
1903 ...	154,382	145,500	69,759	42,752	20,283	13,863	446,539
1904 ...	153,260	145,122	68,661	42,234	22,111	14,321	445,709
1905 ...	151,033	143,362	68,780	41,807	23,703	14,123	442,808
1906 ...	151,261	142,216	69,771	40,489	24,973	13,730	442,440
1907 ...	152,607	147,270	66,849	37,861	24,950	14,464	444,001
1908 ...	156,000	143,551	67,309	38,193	25,141	15,952	446,146
1909 ...	160,080	146,106	69,755	38,255	26,673	17,391	458,260

4. **Centralisation of Schools.**—The question of centralisation of schools adopted so successfully in America is receiving some attention in the Commonwealth, and particularly in New South Wales. It is recognised that a single adequately-staffed and well-equipped central institution can give more efficient teaching than a congeries of small scattered schools in the hands of less highly-trained teachers, and the small schools in

some districts were therefore closed and the children conveyed to the central institution. The principle was first adopted in New South Wales in 1904, when the conveyance of pupils was authorised in the case of twelve schools.

5. **Education in Sparsely-settled Districts.**—It has always been the aim of the State to carry the benefits of education into the remotest and most sparsely-settled districts. This is effected in various ways. (i.) By the establishment of provisional schools, *i.e.*, small schools in which the attendance does not amount to more than about a dozen pupils, these institutions merging into the ordinary public school list when the attendance exceeds the minimum. (ii.) When there are not enough children to form a provisional school what are known as half-time schools are formed, the teacher visiting them on alternate days. In still more sparsely-peopled districts an itinerant teacher goes from house to house within a certain radius. In New South Wales parents in the thinly-peopled areas are also allowed to club together and build a school, which receives aid from the Government in the form of a yearly subsidy and grant of school material. An experiment on the part of New South Wales, the result of which will be watched with some interest, is the establishment of a "travelling" school. A van has been built, in which the teacher will travel and carry with him a tent for himself and one to be used as a school, together with such books and apparatus as are required in a primary school. The school has been in operation since August, 1908, and has so far given very satisfactory results.

6. **Evening Schools.**—Evening public schools have been in existence for many years in some of the States, but their progress has been uncertain. In New South Wales, at latest available date, there were 33 schools with an enrolment of 1099 and average attendance of 561; Victoria had nine schools with enrolment of 1194 and average attendance of 357; Queensland had evening continuation classes attended by 54 pupils; and Western Australia had two schools with an enrolment of 103 district students.

7. **Higher State Schools.**—(i.) In *New South Wales* public schools, in which the subjects taught embrace, in addition to the ordinary course, such others as will enable the pupils to compete at the Senior or Junior University Examinations, are classed as *Superior Schools*. There were 145 of these schools in existence at the end of 1909, with an enrolment of about 93,000 scholars. There are also five *High Schools* in the State—two for boys, two for girls, and one for boys and girls. These had an enrolment in 1909 of 1035 pupils, with an average attendance of 786. In twenty-five country centres the superior puplic schools practically correspond to the high schools, and the educational standards and instructional staff have been so arranged as to prepare for the University matriculation. It is intended also to adapt the teaching in these institutions to the special needs of the districts in which they are situated. Further, these high schools and district schools will be used as preparatory schools for the training of young persons who wish to become teachers. In order to provide teachers of agriculture, provision is made for ten teacher-students annually to attend the second year's training at the Hawkesbury Agricultural College.

The Sydney Grammar School (not a "State" school in the ordinary acceptation of the term), which receives a State endowment of £1500 a year, had in 1909 a quarterly enrolment of 604 pupils and an average attendance of 574.

(ii.) In *Victoria*, what are termed "*Continuation Schools*" have been established at Melbourne, Ballarat, and Bendigo for the purpose of giving preliminary training to young people who propose to join the ranks of the teaching service, and it is hoped that ere long the supply from this source will preclude the necessity for the employment of inexperienced pupil teachers. It is expected that these schools will shortly be able to supply the 300 junior teachers annually needed by the Department. Agricultural High Schools to which teacher students are also admitted, are referred to in (8) hereafter. The enrolment of these High State Schools in 1909 was 1002, of whom 517 were girls.

(iii.) *Queensland* does not possess any distinctly secondary schools under State control, although it is proposed to establish high schools in the more important centres at an early date. There are, however, ten Grammar Schools—six for boys, and four for girls, each of which is subsidised by the State to the extent of £750 per annum, and in addition receives a payment of £250 per annum for providing district scholarships. These scholarships, fifty in number, are granted to State School pupils. The enrolment at the Grammar Schools in 1909 was 1218, and the average attendance 1079. From 1909 onwards the schools will be regularly examined by the Inspector-General of the Education Department.

(iv.) *South Australia.* The Adelaide High School was opened on the 24th September, 1908, and the Advanced School for girls, which had been carried on with much success since its opening in 1879, was merged into it, as was also the Pupil Teachers' School, which had been successfully carried on for eight years. Pupils in attendance at the combined school in 1909 numbered 511. Of these 91 were student teachers, 135 were improving their general education prior to beginning work, 240 were studying for University examinations, and 45 were taking a commercial course. District High Schools were carried on in 1909 at twelve centres with a total attendance of 708 pupils.

(v.) *Western Australia.* With the exception of the technical schools and the normal school referred to elsewhere, there is no distinctly secondary school under the control of the State in Western Australia. During 1909 the upper classes of schools in the largest centres of population were brought together into central schools, in order to secure more economical and effective teaching, and it is intended that these central institutions shall form the nucleus of future high schools. A new secondary school with provision for science teaching is now being built in Perth. Evening Schools are held in various parts of the State, but the work carried on is mainly primary. The Perth High School for Boys is subsidised by the State to the extent of £1000 annually.

(vi.) *Tasmania.* No direct provision has hitherto been made by Tasmania for public education of a standard intermediate between that of the State School and the University, but a few pupils are prepared in the ordinary State Schools for the Junior Public Examination of the University. It is intended to encourage this work in future, and the scheme of scholarships, which was discontinued for many years, has recently been revived. For a period of thirty years, from 1860 to 1890, there was in force in Tasmania a system under which the State, without actually providing educational agencies, did much to foster education within the range of the generally accepted high school curriculum, for the Council of Education during this period conducted public examinations of various grades, at which scholarships for juniors to "superior" schools were awarded, as well as exhibitions to British Universities. The Council also granted the degree of "Associate of Arts" in imitation of the similar Oxford title. Later on the Council of Education evolved and expanded into the University of Tasmania.

8. **Agricultural Training in State Schools.**—The question of agricultural training in ordinary schools has received considerable attention in *New South Wales*. In 1905 a teacher of school agriculture was appointed to visit schools and districts for the purpose of giving instruction to teachers and scholars in the subject, the officer selected possessing the dual qualifications of a thorough acquaintance with agricultural work and school methods. Under the direction of a capable head master, a college has also been opened at Hurlstone, near Sydney, at which practical lessons are given in elementary agriculture, and the institution also serves as a stepping-stone to the Hawkesbury Agricultural College. In 1909, ninety-four teachers attended a summer school at the Hawkesbury Agricultural College for training in agriculture and nature study.

The subject of agricultural colleges and experimental farms is dealt with in the section relating to Agriculture. (See page 419.)

In addition to the regular courses of instruction given in the schools, the practice of carrying on "rural camps," where city school boys may gain some insight into the conditions of country life, has for some time been in successful operation. Within the last two years 129 city boys have gone on the land or joined Agricultural Colleges. Nine training school students were attached to the Hawkesbury Agricultural College during their second year's training, and are now being employed at principal schools in agricultural districts.

In *Victoria* what are termed Agricultural High Schools have been established at Warrnambool, Sale, Shepparton, Wangaratta, and Ballarat. Pupils must be at least fourteen years of age, and have obtained a certificate of merit from the local school, or else be able to afford satisfactory proof that they are qualified to profit by the instruction offered. A local council is to be appointed for each school, and will exercise a general oversight over its operations. The experimental plots at these schools have aroused much interest among the farmers from the surrounding districts. A Supervisor of agriculture reports and gives advice on the teaching of agriculture in the State Schools.

Although *Queensland* possesses an Agricultural College and several experimental farms, there is no agricultural institution directly connected with the Education Department. The Government, however, provides a small grant to encourage the study of agriculture, horticulture, and kindred subjects in the State Schools, while a departmental teacher of agriculture visits the schools and gives assistance in agricultural, horticultural, and nature study work. Short courses of instruction for teachers have been instituted at the Gatton College. A large number of teachers have gained a practical knowledge of milk and cream testing, and the subject is now added to the programme of instruction in several of the dairying districts.

In *South Australia* the Public Schools' Floral and Industrial Society, founded in 1880, holds annual exhibitions of school work from all parts of the State. In addition, it has for some years undertaken the distribution of flower seeds among school children at a very cheap rate, and has thus fostered the love of horticulture with remarkable success. A special instructor has been appointed to give assistance to teachers desirous of making their school gardens aid in nature study work.

Beyond encouragement in the direction of making gardens in the school grounds little has been done in the way of practical agricultural training in the schools of *Western Australia* and *Tasmania*. During the Christmas vacation in 1909 a training camp for teachers was held at the State experimental farm at Brunswick, in Western Australia, when some valuable work was done in nature study and agriculture. At some of the schools in this State there are experimental plots for elementary agricultural work.

9. **Teachers in State Schools.**—The distribution of the teaching staff in the State schools during the year 1909 was as follows:—

TEACHING STAFF IN STATE SCHOOLS, 1909.

(COMMONWEALTH.)

State.	Principal Teachers.		Assistants.		Pupil or Junior Teachers.		Sewing Mistresses.	Total.		
	Males.	Fem.	Males.	Fem.	Males.	Fem.		Males.	Fem.	Total.
New South Wales	2,196	550	833	1,641	59	152	105	3,088	2,448	5,536
Victoria	1,498	655	260	835	344	1,276	424	2,102	3,190	5,292
Queensland ...	689	445	288	569	189	341	—	1,166	1,355	2,521
South Australia ...	309	368	65	334	58	160	117	432	979	1,411
Western Australia	265	187	89	293	29	91	62	383	633	1,016
Tasmania ...	177	203	20	140	16	164	—	213	507	720
Commonwealth	5,134	2,408	1,555	3,812	695	2,184	708	7,384	9,112	16,496

It will be observed that there is a fairly large number of junior teachers, or pupil-teachers, as they are called in most of the States. The pupil-teachers will, however, in time disappear, and their places will be filled by young people who have undergone a course of training in schools specially provided for the purpose. Allusion to the methods of training will be found in the next paragraph.

10. **Training Colleges and their Development.**—(i.) *New South Wales.* Up to the year 1905 the teachers in New South Wales State schools, generally speaking, commenced their career between the ages of fourteen and sixteen years, when they were known as "pupil-teachers." As such, they were held responsible for the instruction of a certain number of children, and, in return for their services, received payment partly in the form of a small salary, and partly in teaching and advice from the principals of the schools wherein they were employed. After serving about our years, and subject to passing various examinations designed to test progress in pædagogics and ordinary book learning, a limited number of the pupil teachers was admitted to a course of training in a training college if successful in passing the qualifying examination. On emerging from this institution, after a course of from one to three years, the teacher became known as an "assistant," and later on became master or mistress of a school. Pupil-teachers who did not enter the Training College were placed in charge of small country schools or appointed "assistants," and later on were allowed to compete in the examinations with the trained teachers; in fact, it was found temporarily to the advantage of teachers not to enter the college. Such was the career of the "trained" teacher; but there was in addition a considerable body of untrained teachers who had commenced teaching in small country schools, and many of whom by perseverance and natural aptitude had gained positions of considerable importance in the Department.

Within the last few years, however, it has come to be recognised that the logical place of a scheme of training is antecedent to employment as a teacher, and with this end in view it has been decided to abolish the so-called pupil-teacher, and to establish continuation schools from which, as well as from the high schools, the future supply of young teachers is to be drawn. At the end of 1909 there were 204 probationary students in their first year and 181 in their second year at the various district schools. It is hoped that the pupil-teacher, as such, will be extinct in a few years. In the meantime there were still as many as 211 employed at the end of 1909. Unfortunately, many of the smaller country schools will still have to be supplied by appointments of untrained persons, but it is hoped that under the new system of inspection the inspectors themselves will be able to devote a fair amount of time to instructing the teachers in correct methods. During vacations the country teachers will also have some opportunities of forming aquaintance with up-to-date ideas by attending Summer Schools, Rural Camp-schools, etc.

The old Fort-street Training College for males and the Hurlstone College for females were closed in 1905, and pending the erection of a properly-equipped institution in the University grounds the teachers are being trained at the Blackfriars Public School, Redfern. During 1909 there were 156 men and 142 women students in the institution.

(ii.) *Victoria.* The teachers in this State are trained by means of what is known as the "junior-teacher" system, *i.e.*, training of junior-teachers in the State schools by the head masters, or by a two years' course in a junior training college—otherwise known as a Continuation school—supplemented by a course of training for two years in the Senior Training College at Melbourne. There are seven Continuation schools now in operation, of which four give training in agriculture also. At the Melbourne, Ballarat, and Bendigo schools students are admitted for training as junior teachers, while the students at Sale, Warrnambool, Shepparton, Wangaratta, and Ballarat are taught in addition the theory and practice of farming. The junior teacher is, of course, not sensibly different from the

pupil-teacher of New South Wales. At the expiration of two years in the Continuation schools they may qualify for entrance to the Senior Training College for a further period of two years, at the end of which time they will be appointed to sixth-class positions as State school teachers at an annual salary of £120 16s. for men, and £90 to £100 for women. It is anticipated that there will shortly be a sufficient number of students in the Continuation schools alone to meet the demands of the teaching service. The present junior-teaching system will then be modified to the extent that all candidates for the teaching profession will be required to graduate in one of these schools. The present Training College dates back to 1874, but during the retrenchment period, viz., from 1893 to 1900, it was closed. The institution was re-opened in February, 1900, with an enrolment of fifty-seven students. By the 30th June, 1909, the number had increased to 120. Since its reopening the college has also given attention to the training of kindergarten teachers, and the course of study prescribed for infant teachers has received the sanction of the Education Department and also of the Kindergarten Association. The College receives students for training from private schools. Of the students in 1909, 95 were departmental, 16 non-departmental students being trained in kindergarten methods, and 9 were non-departmental students being trained as primary teachers.

(iii.) *Queensland.* There is no training college in Queensland at the present time, but it is hoped ere long to establish one at Brisbane in affiliation with the University of Queensland. Young people of both sexes are admitted to the service as pupil-teachers at the age of fourteen years, the only training received being that given by the principals of the schools to which they are appointed. The school for infants at Kangaroo Point is, however, being specially staffed and equipped for training Kindergarten teachers. It is proposed to establish similar institutions at Rockhampton and Townsville.

(iv.) *South Australia.* Up to the year 1908 the system of training candidates for the teaching staff in South Australian State schools was, briefly, as follows:—(*a*) Two years of general education in the High School; (*b*) two years as junior teachers in the primary schools, (*c*) two years general study at the University, without special professional training, and with a limited amount of practical teaching. At the present time three institutions are mainly concerned with the work of training teachers. The Adelaide Observation School has a special class to assist young people desirous of becoming provisional teachers. Those who pass the prescribed examination receive practical training at the Model Provisional School attached to the Observation School. The Adelaide High School gives a three years course of educational and professional training. Those who complete the course may enter the Training College or take appointments as unclassified teachers. At the Training College those who enter for one year take a course of study leading to the infant teachers' or the primary teachers' certificate. Those who remain two years take the primary course in the first year, and in the second prepare for the diploma of education. Sixty-one students were in attendance at the Training College in 1909. Schools of instruction are also held at which provisional school teachers have opportunities of observing the latest methods, while an advisory teacher has been appointed to visit and help the teachers of the smaller schools.

(v.) *Western Australia.* A training college for teachers was opened at Claremont in 1902. The original building provided accommodation for sixty students, but extensions were opened in 1908, and the number in training during 1909 was 88, including 23 teachers for special courses. The course in the training college lasts two years. Central classes for "monitors" (*i.e.*, pupil-teachers) were established at Perth in 1903, and monitors outside the metropolitan area are instructed by correspondence. A normal school was established in Perth in 1907 for the purpose of providing a two years' course of higher instruction for a limited number of children who had completed the State school course

and intended to become teachers. The pupils in attendance during 1909 numbered 60, of whom 38 were girls. It may be observed that the normal school does not aim at giving instruction in the principles and practice of pædagogics, this being left to the teachers to whose schools the students are drafted. To assist teachers of small schools to gain some experience of the best method of school management, a model school has been established at Gosnell's, and arrangements have been made for intending teachers, as well as those actually in charge of small schools, to spend a portion of their time at this institution.

(vi.) *Tasmania.* The system of training adopted in Tasmania is as follows:—(*a*) The candidate is selected at fourteen years of age by a head teacher, and assists as a "monitor" for about a year, during which period he must give proof of suitableness for training. (*b*) At the end of this period there is a two years' course of training in the training college. (*c*) The candidate then returns to his own school and teaches there for two years, the head teacher being responsible for his training in practical work, while the training college authorities give lessons by correspondence. (*d*) The last stage is a final year in the training college as a senior student. Some of the more advanced are granted a second year's training, and it is proposed to allow at least one each year to qualify for the Diploma of Education at the Melbourne Training College.

11. **School Savings Banks.**—Returns shew that these institutions are in existence in three States. In New South Wales, there were 696 banks at the end of 1909, the deposits amounting to £24,208 and withdrawals to £24,811. Since their establishment in 1887, deposits totalled £349,578, and withdrawals £341,670. Of the latter sum £84,641 was placed to children's accounts in Savings Banks. In South Australia, 142 schools had 6075 depositors with £2926 to their credit, and in Western Australia, there were 117 school banks with 5206 depositors and £4041 at credit.

12. **Expenditure on State Schools.**—The net expenditure in each State on primary education during each year of the period 1901 to 1909 is shewn below. The figures do not include expenditure on buildings, which is shewn separately in a subsequent table.

EXPENDITURE ON MAINTENANCE, STATE SCHOOLS, 1901 to 1909.

(COMMONWEALTH.)

Year.	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tasmania.	Cwlth.
	£	£	£	£	£	£	£
1901 ...	623,734	656,907	256,245	152,006	89,694	37,710	1,816,296
1902 ...	652,860	681,282	261,317	151,462	103,898	48,161	1,898,980
1903 ...	677,683	669,376	256,325	147,297	122,016	48,300	1,920,997
1904 ...	693,954	670,182	261,583	147,842	134,064	50,018	1,957,643
1905 ...	699,789	663,580	278,972	151,242	139,043	44,974	1,977,600
1906 ...	727,471	663,302	286,629	152,713	153,010	45,683	2,028,808
1907 ...	816,249	677,701	297,210	152,400	159,122	52,830	2,155,512
1908 ...	934,603	692,410	299,227	152,950	164,456	60,407	2,304,053
1909 ...	940,534	726,020	309,704	164,863	166,103	73,532	2,380,756

The expenditure per head of average attendance for each of the years given above will be found in the succeeding table. As the figures shew, Western Australia has the highest average, followed by New South Wales and Victoria, the lowest rate being in Tasmania.

COST PER HEAD OF AVERAGE ATTENDANCE, STATE SCHOOLS, 1901 to 1909.

(COMMONWEALTH.)

Year.	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tasmania.	Cwlth.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1901 ...	4 0 10	4 7 0	3 12 9	3 9 5	5 9 3	2 12 11	4 0 8
1902 ...	4 3 9	4 10 8	3 11 9	3 9 8	5 12 8	3 6 3	4 3 5
1903 ...	4 7 10	4 12 0	3 13 6	3 8 11	6 0 4	3 9 8	4 6 0
1904 ...	4 10 7	4 12 4	3 16 2	3 10 0	6 1 3	3 9 10	4 7 10
1905 ...	4 12 8	4 12 7	4 1 2	3 12 4	5 17 3	3 3 8	4 9 4
1906 ...	4 16 2	4 13 3	4 2 2	3 15 5	6 2 6	3 6 6	4 11 8
1907 ...	5 7 4	4 12 0	4 8 11	4 0 6	6 8 11	3 12 9	4 17 4
1908 ...	5 19 9	4 16 6	4 8 11	4 0 1	6 10 10	3 15 9	5 3 3
1909 ...	5 17 6	4 19 5	4 8 0	4 6 2	6 4 6	4 4 7	5 3 11

Expenditure on school buildings in each of the years quoted was as follows:—

EXPENDITURE ON STATE SCHOOL BUILDINGS, 1901 to 1909.

(COMMONWEALTH.)

Year.	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tasmania.	Cwlth.
	£	£	£	£	£	£	£
1901 ...	57,663	36,040	33,421	13,656	49,073	7,762	197,615
1902 ...	76,793	81,946	9,443	11,250	32,669	11,931	224,032
1903 ...	100,955	39,369	9,006	11,805	35,953	6,710	203,798
1904 ...	72,051	19,502	14,489	9,056	32,892	4,427	152,417
1905 ...	58,820	32,041	14,187	9,094	35,925	4,809	154,876
1906 ...	89,975	39,184	24,896	13,340	39,390	3,456	210,241
1907 ...	103,348	68,416	30,840	15,839	38,928	7,216	264,587
1908 ...	146,715	106,983	44,333	22,726	34,299	8,659	363,715
1909 ...	149,767	162,932	57,349	31,512	31,099	8,442	441,101

The total net cost and the net cost per scholar in average attendance during the year 1909 were as follows:—

NET TOTAL COST PRIMARY EDUCATION, 1909.

(COMMONWEALTH.)

Item.	N.S.W.	Vic.	Q'land.	S. Aust.	W. A.	Tas.	C'wlth.
			£				
Net cost of primary education, including buildings	£ 1,090,301	£ 888,952	367,053	£ 196,375	£ 197,202	£ 81,974	£ 2,821,857
Per scholar in average attendance ...	£6 16/3	£6 1/8	£5 5/3	£5 2/8	£7 7/10	£4 14/3	£6 3/2

The average for the Commonwealth in 1901 was £4 9s. 3d. per scholar in average attendance.

§ 3. Private Schools.*

1. School Teachers, etc., in 1909.—The following table shews the number of private schools, together with the teachers engaged therein, and the enrolment and average attendance in 1909:—

* Private Schools include all schools not wholly under State control. The term "private" though popularly applied is, of course, a misnomer.

PRIVATE SCHOOLS, 1909.

(COMMONWEALTH.)

State.	Schools.	Teachers.	Scholars Enrolled.	Average Attendance
New South Wales	789	3,633	67,982	48,792
Victoria	678	2,178	53,821	43,000*
Queensland	168	777	15,963	13,658
South Australia	186	688	11,643	9,200
Western Australia	121	414	8,506	7,209
Tasmania	140	420	6,513	5,210*
Commonwealth	2,082	8,110	164,428	127,069

* Estimated.

The figures for Queensland include the returns from Grammar Schools, of which there are ten—six for boys and four for girls. These schools are governed by boards of trustees, partly nominated by Government, and partly by the subscribers to the funds. The trustees make regulations regarding the fees of scholars, the salaries of teachers, and generally for the management of the schools. Each school is endowed by the Government at the rate of £750 per annum together with an additional £250 to provide district scholarships, of which five were allotted to each school from 1st January, 1909.

2. **Growth of Private Schools.**—The enrolment and average attendance at private schools during 1891 and in each year of the period 1899 to 1909 are shewn below:—

ENROLMENT AND ATTENDANCE AT PRIVATE SCHOOLS, 1891 to 1909.

(COMMONWEALTH.)

Year.	Enrolment.	Average Attendance.	Year.	Enrolment.	Average Attendance.
1891 ...	124,485	99,588	1904 ...	146,339	119,915
1899 ...	151,803	122,188	1905 ...	145,143	118,627
1900 ...	153,433	124,313	1906 ...	152,058	124,510
1901 ...	148,659	120,742	1907 ...	152,037	122,878
1902 ...	144,437	117,293	1908 ...	152,399	125,530
1903 ...	147,135	120,193	1909 ...	164,428	127,069

In view of the growth in population during the period covered by the table the increase in enrolment and attendance does not afford room for much satisfaction. The returns will no doubt in future be to some extent adversely affected by the development of the higher State schools alluded to in a preceding paragraph.

3. **Defects in Returns of Private Schools.**—Throughout Australia, until quite recently, no administrative machinery existed by means of which supervision could be exercised over the course of education carried out under other ægis than that of the Departments of Education themselves. These departments were without authority over the qualifications of the teaching staff, the equipments, the curricula, or general circumstances of private or denominational schools. With the exception of Western Australia, Victoria, and Tasmania, this state of things continues to the present time.

Without a thorough system of registration of all schools (public or private) the certainty of the operation of the compulsory clause of Public Instruction Acts must

necessarily be insecure. Proper statistical information, moreover, cannot be obtained without imposing upon all schools the duty of rendering complete and prompt returns in regard to enrolment, attendance, teaching staff, equipment, etc.

Recent educational criticism has led, not only to a better training of teachers in State schools, and, to some extent, in private schools, but also to a better recognition of the importance of accurate information as to the progress of educational events. It is understood that in New South Wales steps will be taken shortly to secure more adequate information as to the condition of schools generally.

In Victoria up to the year 1905 no attempt had been made to bring private schools under general administrative control, but the Registration of Teachers and Schools Act of 1906 established a registration scheme under a special Board. This Board has now registered the private schools and teachers in the State. The prime object of the Act is that after a lapse of a definite period there shall be no school of any kind in the State which does not comply with reasonable demands and requirements concerning the nature of its building, its equipment, and the qualifications of its teachers. The teachers who have registered belong to the following classes :—Sub-primary, 2377 ; primary, 4928 ; secondary, 1705 ; and 3330 teachers of special subjects. Some teachers have registered under two, three or four divisions, and the number of individual teachers is given as about 8382. The teaching staff of the Department of Public Instruction itself is not subject to the Registration Board. Registered private schools of all kinds number 773. The only control which the Government has on the scholars in private schools is provided by the law as to compulsory attendance, "efficient and regular instruction" in a private school being counted as adequate excuse for not attending the requisite number of days at a State school.

In Queensland, with the exception of the grammar schools, which are now examined annually, there is practically no control over the private schools, beyond the fact that they may submit themselves to inspection if so desired, and there is apparently no provision in South Australia for any Government supervision over private school affairs.

In Western Australia, however, non-Government schools must be declared efficient by the Education Department if attendance at them is to be recognised as fulfilling the requirements of the law, and the school registers must be open to the inspection of the compulsory officers of the Department.

In Tasmania the Education Act requires the teachers of other than State schools "to furnish during January of each year returns shewing attendances at such schools." Despite the fact that penalties are prescribed for non-compliance with the law, nevertheless many teachers neglect to return the forms sent out. Provision has been made for registration of private teachers and schools very much on the lines adopted in Victoria. The Act declares that all persons who were employed in a *bonâ fide* manner for at least three months before 25th October, 1906, are entitled to be registered as teachers without submitting proof of professional qualifications. No person can be registered as a private teacher since July, 1907, unless the Board is satisfied as to his fitness for the work.

§ 4. Free Kindergartens.

The following information regarding Free Kindergartens in the Commonwealth has been compiled from particulars supplied by the principals of the chief institutions in each State, except in the case of Victoria, the details for this State being furnished by the honorary secretary of the Free Kindergartens Union.

FREE KINDERGARTENS IN THE COMMONWEALTH, 1909.

State.	No. of Schools.	Teachers.	Average Attendance of Children.	Number of Teachers in Training.
New South Wales (Sydney) ...	8	11	340	43
(Newcastle) ...	3	3	120	8
Victoria (Melbourne)	12	21	525	21
Queensland (Brisbane) ...	2	4	74	6
(Clermont) ...	1	1	27	3
South Australia (Adelaide) ...	4	27	270	21
Total	30	67	1,356	102

At Brisbane, where two more schools are in course of formation, the training of teachers is undertaken by the Queensland Crèche and Kindergarten Association.

In Tasmania, schools were established in Hobart and Launceston at the end of 1910.

There are no free Kindergartens in Western Australia. It must, of course, be distinctly understood that the information given above refers to Kindergartens under private management, and is exclusive of institutions controlled by the Education Department of the various States.

§ 5. Universities.

1. **Origin and Development.**—The history of the foundation and progress of the four then existing Australian Universities was traced at some length in Year Books No. I. and No. II. In the present volume space will permit of only a very brief reference to the subject.

(i.) *University of Sydney.* The Act of Incorporation of the University of Sydney received Royal assent on the 1st October, 1850, and the first Senate was appointed on the 24th December of that year. The first matriculation examination was held in October, 1852, when twenty-four candidates passed the required test, and the formal inauguration ceremony took place on the 11th October of the same year. A Royal Charter was granted to the University on the 27th February, 1858. Women students were admitted in 1881. At the inception of the University there were only three professorships. The present staff consists of sixteen professors, five assistant professors, eighty-one lecturers and demonstrators. There are, in addition, fifty miscellaneous assistants in laboratories and three curators of museums.

(ii.) *University of Melbourne.* This institution was established by Act of Parliament assented to on the 22nd January, 1853, and its first Council was appointed on the 11th April of that year. The foundation stone of the main building was laid on the 3rd July, 1854, and the University was formally inaugurated on the 13th April, 1855. By Royal Letters Patent issued in 1859 its degrees are, like those of the Sydney institution, declared of equal status with those of any other university in the British Empire. Women students attended lectures for the first time in 1881. The University, which began in 1855 with Schools of Arts and Laws, has now a staff of sixteen professors, forty-six lecturers and demonstrators, and thirteen honorary demonstrators. The Conservatorium of Music has a staff numbering twenty-five.

(iii.) *University of Adelaide.* This University was established by Act of Parliament in 1874. Its origin and progress was largely due to the munificence of the late Sir Walter Watson Hughes and Sir Thomas Elder, G.C.M.G., the total gifts of the latter amounting to nearly £100,000. The academical work of the institution was commenced in March, 1876, when eight matriculated and fifty-two non-graduating students attended lectures. The foundation stone of the University buildings was laid on the 30th July, 1879, and the buildings were opened in April, 1882. In 1881, by Royal Letters Patent, the degrees granted by the institution were recognised as of equal distinction with those of any university in the British Empire. The Elder Conservatorium of Music was opened in 1898. Power was given by Act of Parliament in 1880 to grant degrees to women. At first there were only four professorships in the University, whereas the present staff consists of ten professors, twenty-five lecturers and ten assistant lecturers and demonstrators, exclusive of the staff at the Conservatorium, which also numbers ten.

(iv.) *University of Tasmania.* The Act to establish the University of Tasmania (Hobart) was assented to on the 5th December, 1889. At the present time, the institution, which is small, but efficient, possesses a staff of three professors and five lecturers. Under Statute dated 13th April, 1905, the Zeehan School of Mines and Metallurgy was affiliated to the University.

(v.) *University of Queensland.* The Act to establish the University of Queensland was passed in 1909, and the first Senate was appointed on the 14th April, 1910. The University was opened on the 18th and lectures given on the 20th March, 1911, by professors of classics, chemistry, physics and mathematics, and engineering.

(vi.) *University of Western Australia.* The University Commission in this State has recommended the establishment of a university somewhat on the lines of those in the Eastern States but with such amendments as would bring it as far as possible into accord with the most modern requirements. The Act establishing a University was passed on the 18th February, 1911. In addition to lectureships, it is proposed to open the institution with four professorships—modern literature and history, mathematics and physics, chemistry, and engineering and mining—while a chair in agriculture will be endowed by the generosity of Dr. Hackett.

2. **Teachers and Students of Universities.**—The following table shews the number of professors and lecturers and the students in attendance at each of the Commonwealth Universities during the year 1909 :—

UNIVERSITIES—TEACHERS AND STUDENTS, 1909.

University.	Professors.	Lecturers.	Students attending Lectures.		
			Matriculated.	Non-matriculated.	Total.
Sydney	21	81	924	350	1,274*
Melbourne	16	53	...	...	998†
Adelaide	10	45	385	269	654‡
Tasmania (Hobart) ...	3	7	53	62	115‖

* Including 140 females. † Including 161 females, but excluding 8 male and 115 female music students. ‡ Including 128 females, but exclusive of 68 male and 323 female music students. ‖ Including 54 females.

3. **University Revenues.**—The income of the Universities from all sources during the year 1909 was as follows:—

UNIVERSITIES.—REVENUE, 1909.

University.	Government Grants.	Fees.	Other.	Total.
	£	£	£	£
Sydney	15,845	22,459	30,692	68,996
Melbourne	19,250	21,286	973	41,509
Adelaide	7,195	9,776	5,755	22,726
Tasmania (Hobart)	4,150	1,037	125	5,312

The column "Other" includes the receipts from private foundations. The extent to which the Universities have benefited by private munificence will be apparent from the following table :—

PRINCIPAL PRIVATE BENEFACTIONS TO AUSTRALIAN UNIVERSITIES.

University of Sydney.		University of Melbourne.		University of Adelaide.	
Donor.	Amount.	Donor.	Amount.	Donor.	Amount.
	£		£		£
J. H. Challis ...	277,000	Sir Samuel Wilson	30,000	Sir Thos. Elder ...	98,760
Sir P. N. Russell ...	100,000	James Stewart ...	25,624	R. Barr Smith ...	8,000
Thos. Fisher ...	30,000	Sir Fr'ncis Ormond	20,000	Sir W. Hughes ...	20,000
Edwin Dalton ...	8,000	John Hastie ...	19,140	Hon. J. H. Angas	10,000
Hugh Dixson ...	7,050	Robert Dixson ...	10,837	Other donations ...	13,580
Hon. SirW. Macleay	6,000	David Kay ...	5,764		
Mrs. Hovell ...	6,000	Henry Dwight ...	5,000		
Thos. Walker ...	5,700	Wm. Thos. Mollison	5,000		
Other donations ...	52,740	Other donations ...	43,534		
Total £	492,490	Total £	164,899	Total £	150,340

In addition to the above there were various other bequests to Sydney University—e.g., collection of Egyptian antiquities, etc., by Sir Charles Nicholson, and Natural History collection by Mr. Geo. Masters, while the building for the Natural History Museum was given by Sir W. Macleay. Numerous prizes and scholarships have also been given to the various colleges. In Melbourne, Sir Francis Ormond's benefactions to Ormond College amounted to about £108,000. Private benefactions to the University of Tasmania and the newly-established University of Queensland amount to £1445 and £2192 respectively.

4. **University Extension.**—Under a statute of the Senate of Sydney University, approved of in 1892, a Board was appointed, which was empowered from time to time to recommend to the Senate the names of suitable persons for giving courses of lectures, and to hold examinations in the subjects of the lectures. The Board receives and considers applications from country centres, and makes provision for engaging lecturers and managing the entire business connected with the various courses. The project has only met with fair success, no lectures having been given in some years, but lately there appears to be an awakening of interest in the matter. The Board also arranged for courses of lectures in Queensland and Western Australia. In 1909 the average attendance at extension lectures in New South Wales was 479.

University extension lectures in Victoria date from the year 1891, when a Board was appointed by the Melbourne University for the purpose of appointing lecturers and holding classes and examinations at such places and in such subjects as it might think fit. Interest in University extension is apparently on the wane in Victoria, as lectures were delivered in four centres only in 1907 and 1908, as against eight centres in 1904.

The Adelaide University has also instituted short courses of extension lectures in Arts and Science, to which students are admitted on payment of a nominal fee. Public intimation of these lectures is made from time to time during the session. For 1909 a course of twelve lectures was provided. The University of Tasmania provides for courses of lectures at Launceston, which are being delivered weekly by members of the University teaching staff.

§ 6. Technical Education.

1. **General.**—Although provision has been made in some of the States in respect to many necessary branches of technical education, the total provision made would imply that this branch of education has not been regarded as of great importance. As will be seen later on, the expenditure on technical education for the whole of Australasia is comparatively insignificant.

2. **New South Wales.**—The present organisation of technical education in this State dates from the year 1883, when a Technical Education Board was appointed as a result of suggestions made at the Technological Conference held in 1879. This Board continued its function till November, 1889, when it was dissolved. and the work has thenceforward been carried on as a branch of the Public Instruction Department. The chief centre of activity is, of course, in Sydney, where the Technical College and Technological Museum are situated, the college having been opened for the reception of students early in 1892. Colleges have also been erected in some of the chief country towns—at Maitland in 1890; Newcastle 1896; Bathurst 1898; Broken Hill 1898; Albury 1899; and Goulburn 1902.

The enrolment in 1909 at technical classes throughout the State was as follows:—

TECHNICAL CLASSES, NEW SOUTH WALES, 1909.

Classes.	Enrolments.				
	Sydney.	Suburban.	Country.	Public Schools.	Total.
Agriculture	204	65	48	...	317
Sheep and wool	166	...	184	...	350
Chemistry	422	92	284	202	1,000
Biology	107	130	45	...	282
Art	1,353	587	1,030	90	3,060
Architecture	1,309	185	705	...	2,199
Printing, etc.	139	...	...	...	139
Engineering — Mechanical	1,118	179	687	...	1,984
Engineering — Electrical	458	...	177	...	635
Engineering — Sanitary	971	65	140	...	1,176
Engineering — Mining	381	65	482	...	928
Mathematics	728	325	268	...	1,321
Commercial	314	231	396	480	1,421
Women's work	947	327	2,161	1,086	4,521
Miscellaneous	235	384	112	1,178	1,909

Classes in various subjects are also held at other country centres and at a large number of public schools. Technical Day Schools have been established at the Central College in Sydney, and at Newcastle and Goulburn. The course of instruction covers two years and is designed to prepare young students for admission to the Engineering, Mining, or Architecture classes at the College. As mentioned elsewhere, higher technical training is afforded at the Schools of Mines and Engineering in connection with the University. References to the agricultural colleges will be found in the section dealing with Agriculture. (See page 419.)

3. **Victoria.**—Technical instruction in mining has for many years received considerable attention in Victoria, the Ballarat School of Mines, which was established as far back as 1870, having achieved an Australasian reputation. The general scheme of instruction, however, lacked cohesion, and it was not until after the publication of the Report of the Royal Commission on Technical Education, which was appointed in 1899, that many defects were remedied. The largest technical institution in Melbourne is the Working Men's College, founded in 1887. The College, in addition to giving instruction to a large number of technical subjects, is also a School of Mines. Science and Art classes have been established at some of the larger State schools. At the 30th June, 1909, there were seventeen technical schools receiving aid from the State. These were as follows:—

TECHNICAL EDUCATION, VICTORIA, 1909.

Institution.	Receipts.	Enrolment.
	£	
Melbourne Working Men's College	10,000	2050
Ballarat School of Mines	4,000	1256
Bendigo School of Mines	2,300	679
*Geelong Gordon Technical College	1,000	451
Bairnsdale School of Mines	750	159
Maryborough Technical College	750	308
Stawell School of Mines	750	175
Castlemaine Technical School	550	188
Daylesford Technical School	350	128
Melbourne College of Domestic Economy	340	105
Sale Technical School	400	119
Horsham Working Men's College	350	133
*Eastern Suburbs Technical College	300	222
Echuca School of Arts	300	124
Kyneton Technical School	250	97
Nhill School of Arts	200	63
Warrnambool School of Arts	150	24

* January to June.

Of the above schools, seven afford instruction in Science, Art, and Trade subjects; two in Art and Science; four in Art and Trade; three in Art; and one in Trade.

4. **Queensland.**—Previous to 1902 technical colleges were carried on in connection with Schools of Art in many of the towns, under the control of local committees, by whom regulations were framed and the colleges administered. The aid granted by the State was £1 for every £1 raised locally, but no grant was to exceed the amount voted annually by Parliament. In 1902 a Board of Technical Education was formed, and held office from September of that year till the 27th May, 1905, and during this time devoted much energy towards the improvement of technical education in Queensland. The control, however, was removed from the Board in July, 1905, and vested in the Minister of Education, who appointed an officer of his Department to the position of Inspector of Technical Colleges. This officer reports on technical education generally, inspects the

colleges, sees that the grants to the various colleges are spent to the best advantage, and so on. Under "The Technical Instruction Act of 1908" the State may contribute four-fifths of the cost of construction and equipment of technical colleges, and the provision has already been availed of in several instances. Efforts are being made to bring the country technical colleges into closer relationship with the State schools, by providing for the instruction of selected pupils in various technical subjects. The sixteen colleges open in 1909 were situated at Bowen, Central (with branches at South Brisbane and West End), Bundaberg, Cairns, Charters Towers, Gympie, Herberton, Ipswich, Mackay, Maryborough, Mount Morgan, Rockhampton, Sandgate, Toowoomba, Townsville, and Warwick.

A technical day-school has been established at Brisbane for the purpose of preparing students for the college courses in the commercial, wool, engineering, mining, and domestic departments.

It is proposed to affiliate the Central Technical College with the University. The average enrolment per term in the various departments of Queensland technical colleges is given hereunder for the year 1909 :—

TECHNICAL CLASSES, QUEENSLAND, 1909.

Department.	Enrolment.	Department.	Enrolment.
Art	516	Geology, Mineralogy, Mining	36
Commerce	882	Mechanical Engineering ...	436
Trades	192	Agriculture	55
Mathematics	319	Health and Sanitary Science	127
Physics	67	Domestic Science and Art ...	910
Chemistry and Metallurgy ...	162	Revisal	166
Electricity	70		

5. **South Australia.**—A considerable amount of attention has been given to technical education in South Australia, particularly in connection with the mining industry. The School of Mines and Industries in Adelaide was founded in 1889. There are in addition Schools of Mines at Moonta, Port Pirie, Kapunda, and Gawler. A School of Design, Painting, and Technical Arts has been established in Adelaide, with branches at Port Adelaide and Gawler.

The enrolment at the larger classes was as follows :—

TECHNICAL CLASSES, SOUTH AUSTRALIA, 1909.

Department.	Enrolment.	Department.	Enrolment.
Applied Mechanics... ...	146	Fitting and Turning ...	284
Carpentry	313	Mathematics	330
Chemistry and Physics ...	330	Metallurgy, Mining, etc. ...	100
Domestic Sciences	728	Wool Classing	205
Electrical Engineering ...	107		

6. **Western Australia.**—A technical school was established at Perth in 1900, and since its opening has progressed rapidly. Extensive additions to the buildings were made in 1909. The institution is affiliated with the Adelaide University, and it is hoped that the students will shortly be allowed to take the degree of B.Sc. without leaving the school. There are branch institutions at Midland Junction, Fremantle, Claremont, Coolgardie, Kalgoorlie, Boulder, Menzies and Murchison. The schools are all under the control of the Education Department, the officer entrusted with their supervision being

styled Director of Technical Education. The Director also supervises the School of Mines at Kalgoorlie, which is controlled by the Mines Department. The number of individual students at each college during the last term of 1909 was as follows:—

TECHNICAL CLASSES, WESTERN AUSTRALIA, 1909.

College.	Students.	College.	Students.
Perth	431	Coolgardie	62
Boulder	203	Kalgoorlie	76
Menzies	15	Fremantle	232
Claremont	23	Midland Junction	54
Murchison	28		

7. **Tasmania.**—In this State provision for technical education dates from the year 1888. At the present time the most important technical institution is the School of Mines and Metallurgy at Zeehan. Courses of instruction are given in metal mining and in metallurgical chemistry and assaying, the diploma in metal mining entitling the holder to the Government certificate of competency as a mine manager. The institution is affiliated to the University of Tasmania. There are also two other schools under the control of the Education Department, each managed by a committee appointed by the Governor-in-Council. Tasmanian technical schools naturally devote their chief attention to mining and mineralogy.

Particulars regarding the schools are given hereunder:—

TECHNICAL CLASSES, TASMANIA, 1909.

Schools.	Government Aid.	Classes.	Enrolment.	Attendance.
	£	No.	No.	No.
Hobart	850	23	263	65
Launceston	850	12	322	42
Beaconsfield	250	11	89	67
Zeehan	700	21	120	24

The table hereunder shews the enrolment and attendance at technical schools and classes in the Commonwealth during 1909:—

ENROLMENT AND ATTENDANCE AT TECHNICAL SCHOOLS, 1909.

(COMMONWEALTH.)

State.	Enrolment	Average Attendance	Technical Classes at State Schools.	
			Enrolment	Av. Attend.
New South Wales	18,206	10,125	3,036	1,341
Victoria	7,599	3,963	285	...
Queensland	5,608	3,115	...	...
South Australia	4,179	1,381	306	...
Western Australia	1,574	*	...	...
Tasmania	794	248	...	...

* Not available.

8. **Expenditure on Technical Education.**—The expenditure on technical education in each State during the period 1905 to 1909 is shewn below:—

EXPENDITURE ON TECHNICAL EDUCATION, 1905 to 1909.

(COMMONWEALTH.)

Year.	N.S.W.	Victoria.	Queensland.	South Aust.	West. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
1905 ...	25,262	17,117	5,055	7,481	7,205	2,650	64,770
1906 ...	26,764	21,444	6,803	7,663	7,931	2,650	73,255
1907 ...	33,568	22,322	9,610	8,006	7,940	2,418	83,864
1908 ...	51,814	26,839	10,720	7,856	9,264	2,215	108,708
1909 ...	61,452	27,039	13,589	12,742	9,422	3,209	127,453

The figures in the preceding table represent an expenditure of about 7d. per head of the population of the Commonwealth, as compared with over 11s. per head spent on maintenance for primary education, and clearly shew that technical education has not attained its proper place in the educational organisation of Australia.

§ 7. Diffusion of Education.

1. **General Education.**—A rough indication of the state of education of the people is obtained at each Census under the three headings, "read and write," "read only," and "cannot read." The grouping of the whole population, exclusive of aborigines, in these three divisions is given for each Census since 1861:—

EDUCATION AT CENSUS PERIODS, 1861 to 1901.

(COMMONWEALTH.)

State.		1861.	1871.	1881.	1891.	1901.
N.S. Wales ...	Read & write	188,543	296,741	507,067	835,562	1,071,935
	Read only...	46,024	56,391	49,372	43,539	29,728
	Cannot read	116,293	149,866	193,386	244,853	253,183
Victoria ...	Read & write	328,362	478,464	653,346	908,490	998,010
	Read only...	57,351	70,953	47,950	32,794	21,852
	Cannot read	152,915	180,781	160,270	198,556	181,208
Queensland ...	Read & write	17,152	74,940	136,436	276,381	376,294
	Read only...	3,680	12,080	13,657	14,618	11,737
	Cannot read	9,227	33,084	63,432	102,719	110,098
South Australia	Read & write	72,190	117,349	200,057	236,514	290,748
	Read only...	18,535	21,509	15,267	9,571	8,283
	Cannot read	36,105	46,768	64,541	74,346	64,126
West. Australia	Read & write	7,683	14,166	19,684	34,254	150,099
	Read only...	1,301	2,717	2,430	2,061	3,107
	Cannot read	5,853	7,902	7,594	13,467	30,918
Tasmania ...	Read & write	48,282	55,941	74,966	103,138	133,579
	Read only...	13,136	13,946	9,606	6,287	3,907
	Cannot read	28,559	29,441	31,133	37,242	34,989
Commonwealth	Read & write	662,212	1,037,601	1,591,556	2,394,339	3,020,665
	Read only...	140,027	177,596	138,282	108,870	78,614
	Cannot read	348,952	447,842	520,356	671,183	674,522

The proportion in the Commonwealth of the various classes per 10,000 of the population is shewn below for each Census period :—

PROPORTION OF EDUCATED AND ILLITERATE PER 10,000 PERSONS, 1861 to 1901.

(COMMONWEALTH.)

Division.	1861.	1871.	1881.	1891.	1901.
Read and write	5,752	6,239	7,073	7,543	8,004
Read only	1,217	1,068	615	343	208
Cannot read	3,031	2,693	2,312	2,114	1,788

2. **Education of Children.**—The figures in the preceding tables refer to the entire population of the Commonwealth, and as the age constitution of those dwelling in the various portions of Australia underwent considerable modifications during the period dealt with, a far more reliable test of the diffusion of education will be obtained by a comparison of the Census returns in regard to children of school age. For comparative purposes this has been taken to include all children in the group over five and under fifteen years of age, and the degree of education of these at each Census will be found below :—

EDUCATION OF CHILDREN AT CENSUS PERIODS, 1861 to 1901.

(COMMONWEALTH.)

State.		1861.	1871.	1881.	1891.	1901.
N.S. Wales ...	Read & write	34,040	68,776	121,735	196,240	251,187
	Read only ...	20,345	26,886	25,100	21,375	15,934
	Cannot read	25,472	32,924	41,663	48,580	60,734
Victoria ...	Read & write	42,268	122,739	170,713	201,199	236,515
	Read only ...	25,518	39,636	25,249	15,656	13,128
	Cannot read	19,341	29,490	21,421	27,441	27,765
Queensland ...	Read & write	2,156	12,698	33,317	62,402	95,635
	Read only ...	1,534	6,104	7,019	7,580	5,955
	Cannot read	1,629	6,015	9,615	16,257	18,827
South Australia	Read & write	15,485	30,608	46,630	58,291	69,451
	Read only ...	8,748	12,432	7,926	4,618	4,229
	Cannot read	6,907	10,074	12,483	17,988	15,480
West. Australia	Read & write	1,333	3,218	4,418	6,910	25,326
	Read only ...	226	617	1,260	933	1,815
	Cannot read	1,015	1,795	1,593	2,348	5,431
Tasmania ...	Read & write	11,919	17,335	17,188	24,007	32,890
	Read only ...	2,848	4,143	4,108	2,974	1,795
	Cannot read	4,581	6,663	6,606	8,829	8,475
Commonwealth	Read & write	107,201	255,374	394,001	549,049	711,004
	Read only ...	59,219	89,818	70,662	53,136	42,856
	Cannot read	58,945	86,961	93,381	121,443	136,712

In the case of Tasmania full details for the years 1861 and 1871 are not available, and the figures for those years are approximate. The variation in degree of education will be more readily seen by reducing the foregoing figures to the basis of proportion per 10,000, and the results so obtained are embodied in the following table, a glance at which is sufficient to demonstrate the remarkable strides that at least the lower branches of education have made since 1861. In that year, only 47 per cent. of the children of school

age could read and write, while 26 per cent. were illiterate. The returns for 1901 shew that the proportion of those who could read and write had increased to nearly 80 per cent., while the totally ignorant had declined by nearly one-half.

EDUCATION OF CHILDREN (AGES 5 to 15) PER 10,000 AT CENSUS PERIODS, 1861 to 1901.

(COMMONWEALTH.)

State.		1861.	1871.	1881.	1891.	1901.
N.S. Wales ...	Read & write	4,263	5,349	6,458	7,372	7,662
	Read only...	2,547	2,091	1,332	803	486
	Cannot read	3,190	2,560	2,210	1,825	1,852
Victoria ...	Read & write	4,851	6,397	7,853	8,236	8,526
	Read only...	2,929	2,066	1,162	641	473
	Cannot read	2,220	1,537	985	1,123	1,001
Queensland ...	Read & write	4,053	5,116	6,670	7,236	7,942
	Read only...	2,884	2,460	1,405	879	495
	Cannot read	3,063	2,424	1,925	1,885	1,563
South Australia	Read & write	4,973	5,763	6,956	7,206	7,790
	Read only...	2,809	2,341	1,182	571	474
	Cannot read	2,218	1,896	1,862	2,223	1,736
West Australia	Read & write	5,179	5,716	6,076	6,780	7,775
	Read only...	878	1,096	1,733	916	557
	Cannot read	3,943	3,188	2,191	2,304	1,668
Tasmania ...	Read & write	6,160	6,160	6,160	6,704	7,620
	Read only...	1,472	1,472	1,472	830	416
	Cannot read	2,368	2,368	2,368	2,466	1,964
Commonwealth	Read & write	4,757	5,910	7,061	7,588	7,984
	Read only...	2,628	2,078	1,266	734	481
	Cannot read	2,615	2,012	1,673	1,678	1,535

3. **Education as shewn by Marriage Registers.**—Another common method of testing the spread of education is to compare the number of mark signatures with the total number of persons married during each year of a series. The percentage of males and females signing with a mark to the total persons married in the Census years 1861 to 1901, and during each of the last seven years, was as follows. The figures refer to marriages in the Commonwealth in respect of which information was obtainable.

ILLITERACY AS SHEWN BY MARRIAGE SIGNATURES, 1861 to 1909.

(COMMONWEALTH).

Year.	Proportion Signing with Marks of Total Persons Married.						
	Males.	Females.	Total.	Year.	Males.	Females.	Total.
	per cent.	per cent.	per cent.		per cent.	per cent.	per cent.
1861	18.50	30.69	24.60	1904 ...	0.95	0.91	0.93
1871	10.55	16.40	13.49	1905 ...	0.91	0.93	0.92
1881	4.34	6.78	5.56	1906 ...	0.92	0.86	0.89
1891	2.27	2.40	2.34	1907 ...	0.81	0.70	0.76
1901	1.35	1.29	1.32	1908 ...	0.71	0.73	0.72
1903	1.17	1.02	1.10	1909 ...	0.65	0.62	0.64

The table shews that there has been a large diminution in illiteracy, and judging from the figures for the last few years the proportion bids fair to practically disappear. Up to 1891 there was a higher proportion of illiteracy amongst females, but from 1901 onwards, generally speaking, the opposite condition prevailed.

§ 8. Miscellaneous.

1. **Scientific Societies.**—(*a*) *Royal Societies.* Despite the trials and struggles incidental to the earlier years of the history of Australia, higher education and scientific advancement were not lost sight of. Thus the origin of the Royal Society of New South Wales dates as far back as 1821, when it was founded under the name of the Philosophical Society of Australasia, Sir Thomas Brisbane being its first president. Scientific work was fitfully carried on by means of a society whose name varied as the years rolled on. It was called the Australian Philosophical Society in 1850. In 1856 the old Australian Society merged into a resuscitated Philosophical Society of New South Wales, and its papers were published up to 1859 in the Sydney Magazine of Science and Art (2 vols. 1858-9). Its present title dates from 1866. Some of the papers of the old Philosophical Society were published in 1825 under the title of "Geographical Memoirs of New South Wales," (Barron Field) and contain much that is interesting in regard to the early history of Australia. One volume containing the Transactions of the Philosophical Society of New South Wales (1862-65) was published in 1866. The journal of the Society did not begin to bear a serial number, however (vol. 1), until the year 1867. Transactions of the Royal Society of New South Wales was issued in 1867, the title of the series being altered to Journal in 1876. Up to the end of 1909 forty-three volumes had been published. The exchange list comprises 434 kindred societies. At the present time the library contains about 20,000 volumes and pamphlets, valued at £7500. Since 1874 the receipts from subscriptions reached over £35,000. Government grants since 1877 totalled about £13,250.

The Royal Society of Victoria dates from 1854, in which year the Victorian Institute for the Advancement of Science and the Philosophical Society of Victoria were founded. These were amalgamated in the following year under the title of the Philosophical Institute of Victoria, while the society received its present title in 1860. The first volume of its publications dates from 1855. The earlier publications dealt largely with Physics, later on Biology became prominent, while at present a large number of papers deal with Geology. Up to 1910 fifty-two volumes of publications had been issued. The Society exchanges with 328 kindred bodies. The constitution of the society states that it was founded "for the promotion of art, literature, and science," but for many years past science has monopolised its energies. The library contains about 8000 volumes. Since its inception the society has received about £14,000 in annual subscriptions, while Government aid has been given to the amount of about £9800.

The inaugural meeting of the Royal Society of Queensland was held on the 8th January, 1884, under the presidency of the late Sir A. C. Gregory. The society was formed "for the furtherance of the natural and applied sciences, especially by means of original research." Shortly after its formation it received an addition to its ranks by the amalgamation with it of the Queensland Philosophical Society, which was started at the time when Queensland became a separate colony. At latest date the members numbered 106; publications issued, 23 volumes; library, 3700 volumes; societies on exchange list, 105. Up to 1909 the total subscriptions reached about £1700.

The present Royal Society of South Australia grew out of the Adelaide Philosophical Society, which was founded in 1853, its object being the discussion of all subjects connected with science, literature and art. Despite this programme, the tendency of the papers was distinctly scientific, or of a practical or industrial nature. With the advent of the late Professor Tate the sphere of activity of the society was considerably enlarged. Permission to assume the title of "Royal" was obtained in 1879, the society thenceforward being known as "The Royal Society of South Australia." In 1903 the society was incorporated. Receipts in 1909 were £433, the Government endowment being £229. Up to 1909 the society had issued thirty-three volumes of proceedings and three volumes of memoirs. The exchange list numbers about 160.

The Royal Society of Tasmania, for horticulture, botany, and the advancement of science, dates from 14th October, 1843, although Sir John Franklin had started a scientific society as early as 1838. The names of Captains Ross and Crozier, of H.M.S. *Erebus* and *Terror*, appear in the list of the first corresponding members. The society, which, since 1844, has published annual volumes of proceedings, possesses 140 members, exchanges with 75 kindred bodies, and has a library containing about 3000 volumes.

(*b*) *Other Scientific Societies.* The Australasian Association for the Advancement of Science, founded in 1888, has its headquarters in Sydney. Its receipts to date were about £11,000, including Government aid to the amount of £3000. The library contains 4000 volumes, valued at £400. Up to date eleven volumes of proceedings have been issued. The exchange list numbers 286. The Linnean Society of New South Wales, with headquarters in Sydney, founded in 1875, possesses a library of 9000 volumes, valued at £5000. Up to date thirty-four volumes of proceedings have been issued. Exchanges number 177. This society maintains four investigators engaged in research work, and owes its development almost entirely to the benefactions of Sir William Macleay. The British Astronomical Association has a branch in Sydney, and in some of the States the British Medical Association has branches.

The principal scientific society in Western Australia is the Natural History and Science Society of Western Australia. This society has grown out of the Mueller Botanic Society, founded in July, 1897. The objects of the society are the study of natural history and pure science, promoted by periodical meetings and field excursions, the maintenance of a library, and the issue of reports of proceedings. It numbers at present 110 members whose subscriptions form its main source of revenue. Government aid in the past has ranged from £7 to £75 per annum, the subsidy paid in 1910 being £12 10s. Since its establishment the society has issued eighteen journals of proceedings. Its publications are exchanged with numerous institutions at home and abroad.

In addition to the societies enumerated above, there are various others in each State devoted to branches of scientific investigation, particulars respecting which are not at present available.

2. **Libraries.**—As far as can be ascertained the total number of libraries in the Commonwealth at the latest available date was about 1500, and the number of books contained therein is estimated at nearly three millions. In each of the capital cities there is a well-equipped Public Library, the Melbourne institution especially comparing very favourably with similar institutions in other parts of the world. The following statement gives the number of volumes in the Public Library of each city :—

METROPOLITAN PUBLIC LIBRARIES.

City.	Number of Volumes in—			Total.
	Reference Branch.	Ordinary Lending Branch.	Country Lending Branch.	
Sydney	208,682	...	9,791	218,473
Melbourne ...	188,695	26,825	...	215,520
Brisbane ...	35,573	...	...	35,573
Adelaide ...	71,534	25,476	...	97,010
Perth	78,380	6,228	...	84,608
Hobart	16,363	...	...	16,363

The maintenance and control of the lending branch of the Public Library at Sydney were transferred in 1909 to the Municipal Council. At the end of December the books numbered 26,313.

The Mitchell Library in Sydney consists of 60,000 volumes and pamphlets, principally relating to Australasia, bequeathed by Mr. D. S. Mitchell, together with an endowment

of £70,000. The testator stipulated that the regulations of the British Museum were to be adopted as far as practicable. Hence the library is the resort of specialists.

The Launceston Institute in Tasmania possesses a library of 27,000 volumes.

The number of libraries in receipt of State or municipal aid, together with the estimated number of books contained therein, is given below for each State:—

SUBSIDISED LIBRARIES AND NUMBER OF BOOKS THEREIN.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust	Tas.
Number of libraries ...	435	436	202	195	225	27
Estimated number of books	628,000	994,000	296,000	448,000	191,000	117,000

The figures in the above table can be taken only as approximations, as in many instances returns were not received from various institutions.

3. **Museums.**—The Australian Museum in Sydney, founded in 1836, is the oldest institution of its kind in Australia. In addition to possessing a fine collection of the usual objects to be met with in kindred institutions, the Museum contains a very valuable and complete set of specimens of Australian fauna. The cost of construction of the building was £59,000. The number of visitors to the institution last year was 214,068, and the average attendance on week-days 623, and on Sundays 1000. The expenditure for 1909 amounted to £11,310, of which £5931 was absorbed by salaries and allowances, and £5379 by purchases and miscellaneous. A valuable library containing nearly 16,000 volumes is attached to the Museum. Representative collections, illustrative of the natural wealth of the country, are to be found in the Agricultural and Forestry Museum, and the Mining and Geological Museum. The latter institution prepares collections of specimens to be used as teaching aids in country schools. The "Nicholson" Museum of Antiquities, the "Macleay" Museum of Natural History, and the Museum of Normal and Morbid Anatomy, connected with the University, and the National Herbarium and Botanical Museum at the Sydney Botanic Gardens, are also accessible to the public. There is a fine Technological Museum in Sydney, with branches in five country centres, the metropolitan institution containing over 100,000 specimens. Valuable research work has been undertaken by the scientific staff in connection with oil and other products of the eucalyptus. The average attendance of the public at the Technological Museums during 1909 was over 220,000.

The National Museum at Melbourne, devoted to Natural History, Geology, and Ethnology, is located in the Public Library building. The expenditure for specimens, furniture, etc., in 1909 was £1000, and salaries and wages £2456. The Industrial and Technological Museum, opened in 1870, contains upwards of 55,000 specimens. There is a fine Museum of Botany and Plant Products in the Melbourne Botanic Gardens. Well equipped museums of mining and geological specimens are established in connection with the Schools of Mines in the chief mining districts.

The Queensland Museum dates from the year 1871, but the present building was opened in January, 1901. Since its inauguration the Government has expended on the institution a sum of £69,589, of which buildings absorbed £16,615, purchases £21,969, and salaries £31,005. The number of visitors during the year was 73,205, of whom 27,626 visited the institution on Sundays. The Queensland Geological Survey Museum has branches in Townsville, opened in 1886, and Brisbane, opened in 1892. The total expenditure on the institution up to the end of 1909 was £6054, of which £2847 was spent on buildings.

Under the Public Library Act of 1884 the South Australian Institute ceased to exist, and the books contained therein were divided amongst the Museum, Public Library, and

Art Gallery of South Australia, and the Adelaide Circulating Library. The Museum was attended by 75,740 visitors in 1909.

The latest available returns shew that the Western Australian Museum contains altogether 47,000 specimens of an estimated value of £57,000. The Museum is housed in the same building as the Art Gallery, and the visitors to the combined institutions during the year numbered 56,000. The expenditure totalled £3556, of which salaries absorbed £1944.

There are two museums in Tasmania—The Tasmanian Museum at Hobart, and the Victoria Museum and Art Gallery at Launceston, both of which contain valuable collections of botanical and mineral products. The Tasmanian Museum received aid from the Government during last year to the extent of £500.

4. **Art Galleries.**—Information regarding the State collections of objects of art in the various capitals is in some cases very meagre, while the method of presentation does not admit of any detailed comparisons being made. The Art Gallery of New South Wales originated in the Academy of Art founded in 1871. Up to July, 1909, the cost of construction of the present building was £94,000. The contents, which are valued at £136,000, comprise 360 oil paintings, 369 water colours, 511 black and white, 150 statuary and bronzes, and 314 ceramics, works in metal and miscellaneous. During 1909 the average attendance on week days was 557, and on Sundays 1918. The expenditure in 1909 amounted to £3123.

The National Gallery at Melbourne at the end of 1909 contained 518 oil paintings, 3565 objects of statuary, bronzes and ceramics, and 13,870 water-colour drawings, engravings, and photographs. The Gallery is situated in the same building as the Museum and Public Library, the total cost of construction being £229,000. At the end of 1909 the Ballarat Art Gallery contained 217 oil paintings and 155 water colors, etc., while there are some valuable works of art in the smaller galleries at Bendigo, Geelong, and Warrnambool.

The Art Gallery at Adelaide dates from 1880, when the Government expended £2000 in the purchase of pictures, which were exhibited in the Public Library building in 1882. The liberality of private citizens caused the Gallery to rapidly outgrow the accommodation provided for it in 1889, at the Exhibition Building, and on the receipt of a bequest of £25,000 from the late Sir T. Elder, the Government erected the present building, which was opened in April, 1900. The Gallery also received a bequest of £16,500 in 1903 from the estate of Dr. Morgan Thomas, and of £3000 in 1907 from Mr. David Murray. At the latest available date there were in the Gallery 209 oil paintings, 124 water colours, 162 black and white, 103 engravings and etchings, 22 statuary, and 541 miscellaneous works in metal, etc., the whole being valued at upwards of £47,000. Building and site are valued at upwards of £31,000. Visitors during the year 1909 numbered 93,984.

The foundation stone of the present Art Gallery at Perth in Western Australia was laid in 1901, the building and site being valued at £60,000. The collection comprises 88 oil paintings, 32 water colours, 217 engravings and black and white, 283 statuary, and miscellaneous metal works, etc., of a total value of £15,000.

In Tasmania the Art Gallery at Hobart was opened in 1887. Its present contents consist of 96 paintings and 81 etchings and black and white drawings. Buildings and site are valued at £30,000. The number of visitors during the year on week days averages 62,000, and on Sundays 30,000.

The Art Gallery at Launceston was erected in 1888 at a cost of £5000, and opened on the 2nd April, 1901. Only a small proportion of the contents belongs to the Gallery, the bulk of the pictures being obtained on loan. At latest date there were on view 80 oil

paintings and 44 water colours valued at £5000. The total value of buildings and site is estimated at £12,100. The average annual attendance is 36,000, and for Sundays 10,000.

5. **State Expenditure on all Forms of Educational Effort.**—The expenditure from the Consolidated Revenue in each State on all forms of educational and scientific activity during each of the last five financial years was as follows:—

EXPENDITURE ON EDUCATION, SCIENCE, AND ART, 1905-6 to 1909-10.

State.		1905-6.	1906-7.	1907-8.	1908-9.	1909-10.
		£	£	£	£	£
New South Wales	Total £	934,634	941,654	1,055,197	1,104,077	1,149,422
	Per head	12/5	12/2	13/4	13/9	13/11
Victoria	Total £	810,850	842,071	872,655	925,368	953,499
	Per head	13/3	13/7	13/10	14/5	14/7
Queensland ...	Total £	338,426	366,635	399,291	423,080	510,388
	Per head	12/8	13/7	14/6	14/11	17/4
South Australia...	Total £	199,628	193,346	210,712	238,376	231,584
	Per head	10/6	10/4	10/7	11/7	11/1
Western Australia	Total £	230,573	217,036	219,176	221,377	222,861
	Per head	17/9	16/6	16/6	16/4	16/-
Tasmania ...	Total £	68,163	68,777	73,242	81,182	87,603
	Per head	7/7	7/8	8/1	8/10	9/7
Commonwealth	Total £	2,582,274	2,629,519	2,830,273	2,993,460	3,155,357
	Per head	12/8	12/8	13/4	13/10	14/3

The comparatively heavy expenditure in Queensland for 1909-10 is due to the inclusion of an expenditure of £70,000 in connection with the establishment of the University.

SECTION XXIII.

PUBLIC JUSTICE.

§ 1. Police.

1. **Introductory.**—The following brief notes refer to the evolution of the force in Australia up to the passing of the Police Act of 1862 (25 Vic. No. 16) in New South Wales:—

The first Act of Parliament specially mentioning the establishment of a police force in Australia was passed in 1833 (4 Wm. IV. No. 7), the settlement from 1788 to that year having been under military rule. The Act provided for the appointment of two or more magistrates for the town and port of Sydney, empowered to select a certain number of suitable men for a police force. This force was at first restricted to the capital and its environs, but in 1838 a further Act was passed (2 Vic. No. 2) providing for the establishment and control of police in the chief country districts. About nine years later the prevalence of cases of horse and cattle stealing led to the formation of mounted patrols along the Great Western, Southern, and Northern roads, a central detachment being located in Sydney. The mounted police consisted principally of old soldiers. With the discovery of the goldfields in the early fifties, another branch of the force known as "gold police," also chiefly old soldiers, was established, and the various divisions were commanded by military officers styled "gold commissioners." While a large number of the members of the early force were actuated with the desire to carry out their duties honestly and efficiently, there were others who were totally unfitted for the service, and the general lack of cohesion and co-operation was reflected in the high criminal returns. A complete reorganisation was, however, effected by the Police Act of 1862 (25 Vic. No. 16), which placed the entire control in the hands of an Inspector-General, who, through the Chief Secretary, was made responsible to Parliament for the general efficiency of the system.

At the present time the police forces of Australia may be said to be satisfactory both in regard to physique and general intelligence, while as regards methods of prevention and detection of crime it is believed that the system in vogue here compares very favourably with those of the older-settled countries of the world.

2. **Strength of Police Force.**—The strength of the police force in each State during the five years ended 1909 was as follows. It may be mentioned that the police forces are entirely under State control, but, by arrangement, the Commonwealth Government utilises their services in various directions, such as the collection of Commonwealth electoral rolls, etc.

POLICE FORCES IN THE COMMONWEALTH, 1905 to 1909.

State.	Area of State in Sq. Miles.	1905.	1906.	1907.	1908.	1909.
New South Wales ...	310,372	2,342	2,342	2,381	2,417	2,435
Victoria...	87,884	1,495	1,518	1,546	1,552	1,598
Queensland	670,500	859	883	923	960	966
South Australia	903,690	420	422	444	429	442
Western Australia ...	975,920	492	507	488	492	475
Tasmania	26,215	234	229	226	232	234
Commonwealth ...	2,974,581	5,842	5,901	6,008	6,082	6,150

The figures for New South Wales for 1909 are exclusive of sixty-six "black trackers," *i.e.*, natives employed in detection of offenders in outlying districts, and five female searchers. In Queensland there were eighty-seven native police, including four engaged in the Water Police branch. The South Australian returns for 1909 are exclusive of forty "black trackers." There are also fifty-four "black trackers" in Western Australia and three female searchers not included in the table.

(i.) *Average Number of Inhabitants to each Police Officer.* The average number of inhabitants to each officer in each State during the same period is shewn below. In considering these figures allowance must, of course, be made for the unequal area and unequal distribution of the population of the various States.

INHABITANTS TO EACH POLICE OFFICER, 1905 to 1909.

(COMMONWEALTH.)

State.	No. of Persons per Sq. Mile, 1901 Census.	Inhabitants to each Police Officer.				
		1905.	1906.	1907.	1908.	1909.
New South Wales ...	4.37	637	633	659	659	659
Victoria	13.67	815	812	807	819	804
Queensland	0.74	615	606	587	575	585
South Australia	0.40	900	910	884	949	929
Western Australia ...	0.19	518	516	536	543	571
Tasmania	6.58	774	787	814	801	787
Commonwealth ...	1.27	693	698	698	703	703

The above figures naturally shew a great disparity in the relative numbers of the population protected by each police officer in the various States, and also in the relative area of territory to each officer. Western Australia and South Australia exhibit the largest figures in the latter respect, this, of course, being due to the fact that extensive areas in each State are as yet unpeopled by white settlers.

3. **Duties of the Police.**—In addition to the ordinary employment attaching to their office, the police are called upon to perform many duties which in other countries are carried out by other functionaries. As far as the Statistician is concerned, it is found that the expert local knowledge possessed by the police renders their services in the collection of such returns as those relating to the agricultural, pastoral, and manufacturing industries, private schools, etc., more than ordinarily valuable. Then, again, the fact that their services are enlisted by such widely different departments as those dealing with mines, stock, agriculture, elections, registrations of births, deaths, and marriages, forestry, fisheries, explosives, old-age pensions, lunacy, public works, labour, etc., greatly enhances their general alertness by widening the range of their experience. Occasionally the objection is heard in some quarters that these special tasks involve some degree of sacrifice of ordinary routine duties, but that the general intelligence of the Australian police is adequate to the obligation to perform these tasks, besides being most creditable, results in a great saving of the public money.

4. **Cost of Police Forces.**—The expenditure from Consolidated Revenue on the police forces in each State during the five years 1905 to 1909 is shewn in the following table. Cost of buildings has been excluded from the return.

COST OF POLICE FORCES IN THE COMMONWEALTH, 1905 to 1909.

State.	1905.	1906.	1907.	1908.	1909.
	£	£	£	£	£
New South Wales	435,577	434,934	462,804	466,994	472,718
Victoria	313,649	312,941	306,130	306,263	320,331
Queensland	159,464	176,086	202,184	207,043	220,344
South Australia	82,419	85,016	87,374	96,979	98,214
Western Australia	126,661	126,276	125,440	124,518	119,111
Tasmania	36,537	35,086	37,152	39,105	39,740
Commonwealth ...	1,154,307	1,170,339	1,221,084	1,240,902	1,270,958

The total for New South Wales includes £23,000 payment to Police Superannuation Fund; similar payments are included also in Victoria and Queensland. The cost per head of the population in each State for the period 1905 to 1909 was as follows:—

COST OF POLICE PER INHABITANT, 1905 to 1909.

(COMMONWEALTH.)

State.	1905.	1906.	1907.	1908.	1909.
	s. d.	s. d.	s. d.	s. d.	s. d.
New South Wales	5 11	5 9	5 11	5 11	5 11
Victoria	5 2	5 1	4 11	4 10	5 0
Queensland	6 1	6 7	7 5	7 6	7 8
South Australia	4 5	4 6	4 6	4 11	4 9
Western Australia	10 1	9 9	9 7	9 5	8 10
Tasmania	4 1	3 11	4 2	4 4	4 4
Commonwealth ...	5 9	5 9	5 11	5 11	5 11

The relatively high cost per head in Queensland and Western Australia is due to the fact that there are in those States extensive areas of sparsely settled country, in which mounted patrols have to be maintained.

§ 2. Lower (Magistrates') Courts.

1. **Introductory.**—In considering the criminal returns of the various States due allowance must be made on account of several factors, such as the relative powers of the courts, both lower and higher, etc. In the case of lower courts, the actual number of laws in each State, the breach of which renders a person liable to fine or imprisonment, must be taken into account. Again, the attitude of the magistracy and police towards certain classes of offences is a factor, for in the case of liquor laws, or laws connected with vagrancy or gaming, the views of magistrates, and instructions issued to the police, may be responsible for considerable variations in the returns. The strength and distribution of the police forces, and the age constitution and distribution of the State's population, also influence the results. In any consideration of criminal returns, due weight should also be given to the prevalence of undetected crime, but information on this point can only be obtained for the State of Victoria. It may be mentioned that each State has its own separate judicial system, the Commonwealth jurisdiction being confined to the High Court of Australia, which is largely a Court of Appeal intermediate

to the Privy Council, although it has also original jurisdiction, and the Commonwealth Court of Arbitration and Conciliation. Full particulars regarding the judical power of the Commonwealth will be found in Chapter III. of the Commonwealth Constitution.

2. **Powers of the Magistrates.**—In New South Wales there is no general limit to the powers of the magistrates in regard to offences punished summarily, their authority depending in each case on the statute which creates the offence and gives them jurisdiction. Except in the case of a very few statutes, and excluding cumulative sentences, the power of sentence is limited to six months. Imprisonment in default of payment of fine is regulated by a scale limiting the maximum period according to the sum ordered to be paid, but in no case exceeding twelve months. Actions for debt and damage within certain limits also come within magisterial jurisdiction. In cases of debts, liquidated or unliquidated, the amount recoverable is not exceeding £50 before a court constituted of a stipendiary or police magistrate at certain authorised places, and not exceeding £30 at any other place before a court constituted of a stipendiary or police magistrate or two or more justices of the peace. The amount in actions of damage is limited to £10, but may extend to £30 by consent of parties.

In Victoria the civil jurisdiction of magistrates is restricted to what may be designated ordinary debts, damages for assault, restitution of goods, etc., where the amount in dispute does not exceed £50. No definite limit is fixed to the powers of the magistrates on the criminal side, and for some offences sentences up to two years may be imposed. The proportion of long sentences is, however, comparatively small, the total punishments of one year and upwards in 1908 comprising only 101 out of 18,775 sentenced.

In Queensland, generally speaking, the maximum term of imprisonment which justices can inflict is six months, but in certain exceptional cases, such as offences against sections 233 and 445 of the criminal code (betting-houses and illegally using animals), sentences of twelve months may be imposed. No limit exists as to the extent to which cumulative sentences may be applied, but in practice the term is never very lengthy.

In South Australia, under the Minor Offences Act, magistrates can impose sentences up to six months, and under the Summary Convictions Act, up to three months. The Police Act of 1869 gives power to sentence up to one year, with hard labour, in the case of incorrigible rogues, while under the Quarantine Act of 1877, and the Lottery and Gaming Act of 1875, sentences of two years may be imposed.

Under the Petty Sessions Act of 1867, in Tasmania, any person charged with having committed, or with having aided or abetted in the commission of an offence in regard to property of a value not exceeding £10, may, on conviction, for a first offence, before two or more justices in Petty Sessions, be imprisoned for any term not exceeding one year, and for a term not exceeding two years for a second or subsequent offence.

3. **Persons Charged at Magistrates' Courts.**— The total number of persons who were charged before magistrates in each State is given below for the five years 1905 to 1909 :—

PERSONS CHARGED BEFORE MAGISTRATES IN THE COMMONWEALTH, 1905 to 1909.

State.	1905.	1906.	1907.	1908.	1909.
New South Wales	61,127	65,197	67,183	66,233	64,502
Victoria	45,484	48,244	60,687	58,778	52,658
Queensland	17,943	18,849	18,621	19,687	19,824
South Australia	5,974	6,324	6,347	6,589	7,332
Western Australia	14,646	14,478	13,968	12,685	12,961
Tasmania	7,090	6,391	6,258	7,048	6,831
Commonwealth... ...	152,264	159,483	173,064	171,020	164,108

In explanation of the large increase shewn by Victoria for the year 1907 it is stated that the returns of summons were inflated by prosecutions under the new Licensing and Pure Food Acts and the Amending Education Act.

The figures given in the tabulation above include, of course, a number of people who were wrongly charged, and statistically are not of great importance. The actual number of convictions in connection with the persons who appeared before the lower courts in each year of the period 1905 to 1909 is, therefore, given hereunder. A separate line is added shewing the committals to higher courts.

CONVICTIONS AND COMMITTALS AT MAGISTRATES' COURTS, 1905 to 1909.

(COMMONWEALTH.)

State.		1905.	1906.	1907.	1908.	1909.
New South Wales	Convictions	51,638	54,809	58,103	57,630	55,767
	Committals	1,454	1,286	1,130	1,015	1,081
Victoria	Convictions	34,134	37,740	46,731	43,705	38,801
	Committals	652	584	561	577	580
Queensland	Convictions	14,730	15,987	16,056	17,710	17,584
	Committals	495	440	464	417	442
South Australia	Convictions	4,936	5,249	5,352	5,664	6,324
	Committals	152	168	105	89	111
Western Australia	Convictions	12,246	12,181	11,803	10,695	10,910
	Committals	253	182	193	187	177
Tasmania	Convictions	5,932	5,449	5,334	5,903	5,930
	Committals	59	55	46	63	44
All States	Convictions	123,616	131,415	143,379	141,307	135,316
	Committals	3,065	2,715	2,499	2,348	2,435

In connection with the variations in convictions at magistrates' courts, it may be noted that deductions in regard to the prevalence of lawlessness based on the totals alone must be largely qualified by several considerations. For example, as previously stated, the passing of new legislation may result in a sudden addition to the crop of convictions, which would not necessarily imply a corresponding growth in lawlessness. Further, the activity of the police in regard to the strict compliance with certain legislation, such as that dealing with Sunday observance, food standards, liquor trade, etc., may cause considerable variations in the returns. Hence references to the spread or otherwise of crime should more correctly depend on a consideration of the convictions for serious crime at the lower courts, and committals to, and convictions at, superior courts.

4. **Convictions for Serious Crime.**—While the figures given in the preceding table refer to the entire body of convictions, the fact must not be lost sight of that they include a large proportion of offences of a technical nature, many of them unwittingly committed, against various Acts of Parliaments. Cases of drunkenness and minor breaches of good order which, if they can be said to come within the category of crime at all, at least do so in a very different sense to some other offences, also help to swell the list. The following table has, therefore, been prepared for the purpose of shewing the convictions at magistrates' courts for what may be regarded as the more serious offences, *i.e.*, against the person and property, either separately or conjointly, and forgery and offences against the currency:—

CONVICTIONS FOR SERIOUS CRIMES AT MAGISTRATES' COURTS, 1905 to 1909.

(COMMONWEALTH.)

State.	1905.	1906.	1907.	1908.	1909.
New South Wales	4,640	4,971	4,799	4,779	4,764
Victoria	2,944	2,879	2,672	2,794	2,626
Queensland	2,175	2,035	1,334	1,433	1,526
South Australia	441	437	499	540	513
Western Australia	1,256	1,215	1,301	1,143	1,074
Tasmania	660	522	438	575	548
Commonwealth ...	12,116	12,059	11,043	11,264	11,051

Owing to a reclassification adopted by Queensland in 1907, a large number of offences have been transferred from the class "Offences against the Person" to "Offences against Good Order," hence the falling-off shewn by that State in the last three years.

Compared with the population the above figures give the following results per 10,000 inhabitants:—

CONVICTIONS FOR SERIOUS CRIME PER 10,000 INHABITANTS, 1905 to 1909.

(COMMONWEALTH.)

State.	1905.	1906.	1907.	1908.	1909.
New South Wales	31.5	32.9	31.0	30.2	29.7
Victoria	24.3	23.5	21.6	22.2	20.4
Queensland	41.4	38.2	24.8	26.1	27.0
South Australia	11.8	11.5	12.9	13.6	12.5
Western Australia	50.2	46.7	49.6	43.1	39.6
Tasmania	36.5	29.2	24.4	31.6	29.8
Commonwealth ...	30.1	29.5	26.6	26.6	25.6

5. **Decrease in Crime.**—The figures quoted in the preceding table show that there has been a considerable decrease in crime during the last few years, while if the comparison be carried back to 1881 the position is seen to be still more satisfactory. The rate of convictions at magistrates' courts per 10,000 of the population is given below for each of the years 1881, 1891, 1901, and 1909. Only the more serious offences, particularised in the preceding paragraph, have been taken into consideration.

RATE OF CONVICTIONS FOR SERIOUS CRIME IN THE COMMONWEALTH.

Year.	Convictions per 10,000 Persons.
1881	69.3
1891	44.8
1901	29.1
1909	25.6

6. **Need of Statistic of Distinct Persons.**—The figures already quoted refer to total convictions, and in respect of individuals necessarily involve a considerable amount of duplication, especially in minor offences, such as drunkenness, petty larcenies, etc., in which the same offender appears before the court many times in the course of the year. In a

few of the States it is possible to obtain the number of distinct persons arrested, but there are no means of arriving at the total distinct persons convicted before the magistrates in any State. The forms submitted to and adopted by the Conference of Statisticians in 1906 provide for information as to separate persons convicted, irrespective of whether they were arrested or summoned, and thus the statistical tabulations will, it is hoped, possess in future greater comparative value. At present, however, the information is not sufficiently complete to be of value for statistical comparisons.

7. **Causes of Decrease in Crime.**—The statistics given shew that there has been a considerable decrease in crime throughout Australia. The results so far quoted are restricted entirely to the lower or magistrates' courts. There has also been a gratifying decrease in regard to offences tried at the higher courts, as will be seen later.

Attempts have been made to account for this decline: *e.g.*, advance in education, enlightened penological methods, etc. Much depends upon what is meant by education. Many classed in census statistics as "educated" can barely read and write. In this connection, moreover, it ought not to be forgotten that collaterally with the introduction of ordinary intellectual education certain people have departed from their pristine virtues. The deterrent effect of punishment, in respect of many offences, notably drunkenness, vagrancy, petty larcenies, etc., appears to be almost negligible. In general, punishment has declined in brutality and severity, and has improved in respect of being based to a greater extent upon a scientific penological system, though in this latter respect there is yet much to be desired. Recent advances in penological methods will be referred to in a subsequent section. Here it will be sufficient to remark that under the old régime, a prisoner on completion of a sentence in gaol was simply turned adrift on society, and in many cases sought his criminal friends, and speedily qualified for readmission to the penitentiary. Frequently he was goaded to this by mistaken zeal on the part of the police, who took pains to inform employers of the fact of a man having served a sentence in gaol. For a long time any assistance to discharged prisoners was in the hands of private organisations, such as the Salvation Army Prison Gate Brigade, but in some of the States, and notably in New South Wales, the authorities themselves look after the welfare of discharged prisoners in the way of finding work, providing tools, etc.

Improvements in the means of communication and identification have been responsible for some of the falling-off noticeable in the criminal returns, the introduction of the Bertillon system having contributed to certainty of identification. Part of the improvement may no doubt be referred also to the general amelioration in social condition that has taken place during the last fifty years.

8. **Drunkenness.**—The number of cases of drunkenness and the convictions recorded in connection therewith during the period 1905 to 1909 will be found in the following table:—

CASES AND CONVICTIONS—DRUNKENNESS, 1905 to 1909.

(COMMONWEALTH.)

State.	1905.		1906.		1907.		1908.		1909.	
	Cases.	Convictions.	Cases.	Convictions.	Cases.	Convictions.	Cases.	Convictions.	Cases.	Convictions.
New South Wales ...	24,135	24,003	25,399	25,253	28,255	28,109	27,976	27,817	27,495	27,363
Victoria	14,458	9,360	14,029	9,529	14,783	9,151	13,102	6,596	12,432	7,025
Queensland	6,638	6,592	7,493	7,473	9,066	9,002	9,203	9,185	9,109	9,102
South Australia ...	2,362	2,332	2,483	2,460	2,838	2,735	3,063	3,024	3,481	3,455
Western Australia ...	3,509	3,425	3,588	3,505	3,591	3,535	3,506	3,441	4,007	3,955
Tasmania	539	528	459	454	535	531	543	527	709	690
Commonwealth ...	51,641	46,240	53,451	48,674	59,068	53,063	57,393	50,590	57,233	51,590

The number of convictions is, as might naturally be expected, almost identical with the number of cases. Victoria, however, is an exception, but in this State it is explained that offenders are generally discharged on a first appearance, and no conviction is recorded, a similar procedure being also adopted in the case of those arrested on Saturday and detained in custody till Monday. The logic of excluding these cases from the list of convictions is certainly open to doubt.

The convictions for drunkenness per 10,000 of the population during each of the years from 1905 to 1909 are given hereunder :—

CONVICTIONS FOR DRUNKENNESS PER 10,000 INHABITANTS, 1905 to 1909.

(COMMONWEALTH.)

State.	1905.	1906.	1907.	1908.	1909.
New South Wales	162.8	167.3	181.3	175.9	170.4
Victoria	77.2	77.9	73.9	52.4	54.7
Queensland	125.4	140.3	167.0	167.1	161.1
South Australia	62.2	64.7	70.9	76.0	84.1
Western Australia	136.8	134.8	134.8	129.8	146.0
Tasmania	29.5	25.4	29.6	29.0	37.5
Commonwealth ...	115.1	119.1	127.7	119.5	119.4

As the figures shew, there has been a remarkable fall in the convictions for drunkenness in Victoria. This is in part due to increasing leniency in dealing with the offence.

The convictions for drunkenness taken by themselves are not an altogether satisfactory test of the relative sobriety of the inhabitants of each State, inasmuch as several important factors must be taken into consideration. The age constitution, for example, of the people is by no means identical in each State, Western Australia having by far the largest proportion of adult males. The avocations of the people affect the result, since persons engaged in strenuous callings are, on the whole, more likely to indulge in alcoholic stimulants than those employed in less arduous ones. The distribution of the population is also a factor, the likelihood of arrest or summons for drunkenness obviously being greater in the more densely populated regions, and lastly, allowance must be made for the attitude of the police and public generally in regard to the offence.

It is not unusual to supplement statistics of drunkenness by furnishing also the relative consumption of alcoholic beverages. Deductions drawn therefrom will be very misleading if they fail to take into account also the consumption of non-intoxicating beverages such as tea and coffee, and the general habit of the people. Throughout the greater part of Europe, tea and coffee are consumed but sparingly, while Australia, as is well known, is one of the greatest tea-drinking countries of the world.

The following table shewing the consumption of spirits, wine, and beer per head of the population has, with the exception of the figures relating to the States of the Commonwealth, been compiled from returns prepared by the British Board of Trade. For New Zealand, Cape of Good Hope, and Canada the figures refer to the year 1908, and for foreign countries to the five years ended 1906. The figures quoted for the Commonwealth States in respect of spirits and beer refer to the year 1909. It is believed that the returns hitherto given by the Board of Trade regarding the consumption of wine in Australia do not in all cases furnish satisfactory results since figures based on a combination of returns of production and net export cannot be regarded as giving

a true statement of the consumption. Further the production of wine in any year does not necessarily enter into consumption in the same year, while allowance must also be made for the conversion of portion of it into brandy or vinegar. Satisfactory results cannot be obtained for the separate States, but the consumption for the Commonwealth as a whole may be set down as 0.5 gallon per head.

CONSUMPTION OF ALCOHOLIC BEVERAGES IN VARIOUS COUNTRIES.

Country.	Consumption per Head of Population.			Country.	Consumption per Head of Population.		
	Spirits.	Wine.	Beer.		Spirits.	Wine.	Beer.
	Imp. Galls.	Imp. Galls.	Imp. Galls.		Imp. Galls.	Imp. Galls.	Imp. Galls.
United Kingdom...	0.85	0.25	26.70	Cape of Good Hope	0.52	2.04	1.30
				Canada ...	0.83	0.09	5.50
New South Wales	0.81		10.07	Russia... ...	0.95	...	0.97
Victoria ...	0.62		11.74	Norway ...	0.60	...	3.46
Queensland ...	0.92		11.32	Sweden ...	1.46	...	12.50
South Australia ...	0.57	0.5	8.26	Denmark ...	2.54	...	20.60
Western Australia	1.09		17.79	German Empire	1.55	1.45	26.10
Tasmania ...	0.51		8.52	Holland ...	1.50	0.37	...
				Belgium ...	1.35	1.02	48.00
Commonwealth	0.75		10.98	France ...	1.36	30.70	7.90
				Switzerland ...	0.99	15.10	14.10
New Zealand ...	0.78	0.16	10.00	Italy	0.26	25.10	0.18

9. **Treatment of Drunkenness as Crime.**—Though the problem of the correct method of dealing with dipsomania is by no means an easy one, it seems fairly clear that the present plan of bringing offenders before magistrates, and subjecting them to the penalty of imprisonment or fine, has little deterrent effect, as the same offenders are constantly reappearing before the courts. Further, the casting of an inebriate into prison, and placing him in his weakened mental state in the company of professional malefactors, doubtless tends to swell the ranks of criminals and certainly tends to lower his self-respect, while examination of the prison records in New South Wales some years ago disclosed the fact that over 40 per cent. of the gaol population had commenced their criminal career with a charge of drunkenness. During the last few years the dangers of moral contamination in this way have been more accurately appreciated, and a system of classification of prisoners has been adopted whereby the petty offender is as far as possible kept from association with the more evil-disposed. With regard to drunkards, however. the Comptroller of Prisons in New South Wales advocates the entire abandonment of the system of repeated fine or imprisonment in favour of a course of hospital treatment. The Comptroller-General of Prisons in Queensland states in his report for the year 1907 that "the drunken habit in many cases is merely one of many symptoms which jointly indicate the existence of a graver condition than simple habitual drunkenness."

10. **Remedial Treatment of Inebriates.**—Legislation has been passed in each State providing for the commitment of inebriates to special Government institutions, but so far New South Wales and Victoria are the only States in which such institutions have been established. The laws in the various States are as follows:—New South Wales, Inebriates Act 1900; Victoria, Inebriates Act 1904; Queensland, Inebriate Institutions Act of 1896; South Australia, Inebriates Act of 1881; Western Australia, Lunacy Act 1903, Pt. iv., Habitual Drunkards; Tasmania, Inebriates Act 1885, Inebriate Hospitals Act 1892. Curative work was first undertaken by the Government of New South Wales in 1907. The institutes are connected with the gaols, and, naturally, custodial measures are still a strong feature in their management; nevertheless the results so far have been encouraging. In Victoria an institute purporting to be wholly remedial was founded in

1907, but up to the end of December, 1909, only males had been admitted. It may be mentioned that there are private retreats in each State, but these are not officially subsidised or inspected.

11. **Treatment of Habitual Offenders.**—In New South Wales the Habitual Criminal Act of 1905 gives judges the power of declaring a prisoner, after a certain number of sentences, to be an habitual criminal, and as such to be detained until, in the opinion of the authorities, he is fit to be at large. At the end of 1909 there were thirty-five persons in prison under this Act. The Indeterminate Sentences Act came into force in Victoria in July, 1908. Somewhat similar Acts are in force in South Australia and Tasmania. The provisions of the Habitual Criminals Amendment Act of 1907 were put into force in South Australia in 1909, and four criminals have been sentenced in accordance with them. Legislation of this character has not yet been adopted in Queensland, where the Comptroller-General states that the class of offenders suitable for its operation is very limited. Naturally it will be some time before the effect of these measures on the prevalence of crime can be estimated. The Comptroller-General of Prisons in New South Wales states, however, that the system has exercised a wholesome deterrent effect on the criminal who is not a prisoner.

In illustration of the need for a Habitual Offenders Act to deal with professional criminals, the following statement culled from the report for 1909 of the Inspector-General of Police in New South Wales will be found of interest. In cases of breaking and entering, thirty-three persons committed 165 offences, or an average of five each. Of the total number, one man committed thirty-two offences, another thirteen, and another twelve. In simple larcenies, 139 persons committed 528 offences, one man being responsible for fifty-two charges, another fifty-six, and another seventeen. Under "burglaries" one man committed five offences; under "false pretences" one man committed nineteen, and another fifteen offences.

12. **Treatment of First Offenders.**—In all the States and New Zealand statutes dealing with first offenders have been in force for some years, the dates of passing the Acts being as follows:—New South Wales, 1894; Victoria, 1890; Queensland and South Australia, 1887; Western Australia, 1892; Tasmania and New Zealand, 1886. The method of procedure is practically the same in all cases, *i.e.*, with regard to most first offenders the magistrate or judge is empowered to allow the offender to go free on recognisances being entered into for his good behaviour for a certain period. In practice, this humane law has been found to work excellently, very few of those to whom its provisions have been extended having been found to relapse into crime.

13. **Children's Courts.**—Special courts for the trial of juvenile offenders have been established in New South Wales, Victoria, Western Australia, and New Zealand within the last few years, while Children's Courts, although not under that name, are practically provided for by the State Children's Acts of 1895 and 1900 in South Australia. The object of these courts is to avoid, as far as possible, the unpleasant surroundings of the ordinary police court. This subject is dealt with in detail in the section dealing with Public Hygiene. (See Section xxx.)

14. **Committals to Superior Courts.**—In a previous section it has been pointed out that comparisons of criminality based on a consideration of the total returns from magistrates' courts are somewhat inadequate, seeing that the figures include numbers of cases which are merely technical breaches of laws having in some instances a purely local significance. The committals to higher courts give a better basis of comparison, although even in this connection allowance must be made for the want of uniformity in jurisdiction. The table below gives the number of committals in each year from 1905 to 1909, with the proportion of such committals per 10,000 of the population. The rates are shewn on a separate line.

COMMITTALS TO SUPERIOR COURTS (COMMONWEALTH), 1905 to 1909.

State.		1905.	1906.	1907.	1908.	1909.
New South Wales	No.	1,486	1,334	1,172	1,060	1,135
	Rate	10.1	8.8	7.2	6.7	7.1
Victoria	No.	652	584	561	577	580
	Rate	5.4	4.8	4.5	4.6	4.5
Queensland	No.	495	440	464	417	442
	Rate	9.4	8.3	8.6	7.6	7.8
South Australia	No.	152	168	105	89	111
	Rate	4.1	4.4	2.7	2.2	2.7
Western Australia	No.	235	182	193	187	177
	Rate	9.4	7.0	7.4	7.0	6.5
Tasmania	No.	59	55	51	63	44
	Rate	3.3	3.1	2.8	3.5	2.4
Commonwealth	No.	3,079	2,763	2,546	2,393	2,489
	Rate	7.7	6.8	6.0	5.7	5.8

The above figures shew that there has been a decrease in serious crime, and, if the comparison be carried farther back, it will be found that the improvement has been considerable. This will be evident from an examination of the following figures, which shew the rate of committals per 10,000 persons in Australia at various periods since 1861:—

RATE OF COMMITTALS IN AUSTRALIA, 1861 to 1909.

Year	1861.	1871.	1881.	1891.	1901.	1909.
Committals per 10,000 inhabitants ...	22	14	12	11	8	6

The decline in proportion to population since 1861 has therefore been about 73 per cent.

§ 3. Superior Courts.

1. **Convictions at Superior Courts.**—The total number of convictions at superior courts, together with the rate per 10,000 of the population, is shewn below for each of the years 1905 to 1909:—

CONVICTIONS AT SUPERIOR COURTS (COMMONWEALTH), 1905 to 1909.

State		1905.	1906.	1907.	1908.	1909.
New South Wales	No.	819	707	629	614	619
	Rate	5.6	4.7	4.0	3.9	3.9
Victoria	No.	382	339	368	365	352
	Rate	3.2	2.8	3.0	2.9	2.7
Queensland	No.	288	249	268	292	345
	Rate	5.5	4.7	4.6	4.8	6.1
South Australia	No.	85	92	74	68	86
	Rate	2.3	2.4	1.9	1.7	2.1
Western Australia	No.	161	150	176	106	87
	Rate	6.4	5.8	6.7	4.0	3.2
Tasmania	No.	24	32	39	29	24
	Rate	1.3	1.8	2.2	1.6	1.3
Commonwealth	No.	1,759	1,569	1,554	1,474	1,513
	Rate	4.4	3.8	3.7	3.5	3.5

In considering the above figures allowance must be made for the various factors enumerated in a preceding paragraph. Only when this is done will the comparatively unenviable pre-eminence of Western Australia in regard to serious crime be explained. Tasmania, it will be noted, shews by far the smallest proportion of serious crime, while a reference to a preceding table discloses the fact that the island State is relatively the smallest consumer of alcoholic beverages. That a definite causal relation exists between the figures shewn by the respective tables is not, however, obvious.

2. **Offences for which Convictions were Recorded at Superior Courts.**—In the following table will be found a classification of the principal offences for which persons were convicted at the higher courts during each year of the period 1905 to 1908. Owing to lack of uniformity in the presentation of the returns for the several States the information is confined to the chief offences against the person only. The figures quoted refer to convictions in the Commonwealth during the period dealt with.

CONVICTIONS FOR SERIOUS CRIME, SUPERIOR COURTS, 1905 to 1908.
(COMMONWEALTH.)

Offences.	1905.	1906.	1907.	1908.
Murder and attempts at	32	35	26	26
Manslaughter	14	21	19	20
Rape and crimes of lust	96	70	90	60
Other offences against the person	256	239	255	278

The comparison necessarily closes with the year 1908, owing to non-receipt of returns from Tasmania for 1909.

While the convictions for manslaughter and crimes of lust are identical in the opening and closing years of the period dealt with, those for murder declined by about 19 per cent. The general total of convictions for all offences against the person shews a decline since 1901 of about 10 per cent.

3. **Capital Punishment.**—The table below gives the number of executions in each State during the period 1905 to 1909:—

EXECUTIONS (COMMONWEALTH), 1905 to 1909.

State.	1905.	1906.	1907	1908.	1909.
New South Wales	...	1	3	...	...
Victoria	...	...	...	1	...
Queensland	2	3	1	...	2
South Australia	1	1	...	1	...
Western Australia	3	1	1	2	1
Tasmania	...	...	...	...	...
Commonwealth	6	6	5	4	3

In the early days of the history of Australia the penalty of death was attached to a large number of offences, many of which at the present time would be dealt with in the lower or magistrates' courts. With the growth of settlement, and the general amelioration in social and moral conditions, the list was, however, considerably curtailed, and the existing tendency is practically to restrict death sentences to cases of murder. It may be remarked that in cases of rape, which is a capital offence in some of the Australian

States, the penalty has been but sparingly inflicted during the last few years. Juries are reputed to be loth to convict on this charge, owing to the uncertainty whether sentence of death will be pronounced.

During the period 1861 to 1880 the average number of executions in the Commonwealth was nine, from 1881 to 1900 the average was six, while for the period 1901 to 1909 the figure stood at five.

§ 4. Prisons.

1. **Prison Accommodation and Prisoners in Gaol.**—The table below shews the number of prisons in each State and the accommodation therein at the end of 1909:—

PRISONS AND PRISON ACCOMMODATION (COMMONWEALTH), 1909.

State.	Number of Prisons.	Accommodation in—		Prisoners at End of Year.
		Separate Cells.	Wards.	
New South Wales	30	2,193	759	1,333
Victoria	18	1,480	729	844
Queensland	12	559	416	516
South Australia	15	812	292	276
Western Australia	27	683	238	*365
Tasmania	2	251	23	81
Commonwealth	104	5,978	2,457	3,415

* Exclusive of 656 aborigines.

The number of prisoners in gaol, exclusive of debtors, at the 31st December in each of the years 1905 to 1909, is given below. A separate line is added in each instance shewing the proportion per 10,000 of the population.

PRISONERS IN GAOLS (COMMONWEALTH), 1905 to 1909.

State.		1905.	1906.	1907.	1908.	1909.
New South Wales ...	Number	1,678	1,519	1,437	1,417	1,333
	Proportion	11.4	10.1	9.3	9.0	8.3
Victoria	Number	990	927	916	875	844
	Proportion	8.2	7.6	7.4	7.0	6.5
Queensland	Number	535	507	501	493	516
	Proportion	10.2	9.5	9.3	9.0	9.1
South Australia	Number	259	237	255	247	276
	Proportion	6.9	6.2	6.6	6.2	6.7
Western Australia ...	Number	465	402	502	351	365
	Proportion	18.6	15.5	19.1	13.2	13.5
Tasmania	Number	92	89	89	96	81
	Proportion	5.1	5.0	5.0	5.3	4.4
Commonwealth	Number	4,019	3,681	3,700	3,479	3,415
	Proportion	10.0	9.0	8.9	8.2	7.9

From the preceding table it will be seen that the proportion to population of prisoners in gaol has fallen considerably during the last five years, while, if the comparison be carried farther back, the position is seen to be still more favourable, the prisoners in gaol in the Commonwealth numbering as much as 16 per 10,000 of the population in 1891.

2. **Improvement of Penological Methods.**—During recent years Australia, in common with most other civilised countries, has introduced considerable modifications and improvements in methods of prison management. Under the old régime punishment partook more or less of the character of reprisal for wrongdoing, and the idea of constituting the prison as a reformative agency was in the background. But of recent years there has been an earnest attempt at effecting a moral reformation in the unfortunates who lapse into crime. This aspect of prison management has been specially prominent in New South Wales. As pointed out by the Comptroller-General of Prisons of that State, there are, however, certain directions in which improvements can be made. The danger and absurdity of sending drunkards to gaol has already been alluded to in a previous section, while present methods of dealing with vagrancy, and particularly with prostitution, have proved quite inadequate. A step in the right direction has however been taken in New South Wales, where, under the Prisoners' Detention Act, prisoners afflicted with certain diseases may be detained until the medical authorities pronounce them to be free from contagion. Unfortunately the Act does not apply to persons imprisoned in default of paying fines.

The general reorganisation of the New South Wales prison system may be said to date from the year 1896. Briefly stated, the chief reforms which have been introduced are as follows:—(*a*) Prevention of contamination consequent on evil association by the adoption of the "restricted association" scheme, under which prisoners are allowed to have as little intercourse with each other as possible, each prisoner having a separate cell, and mingling with other prisoners only at exercise or at work, and then under close supervision. (*b*) Careful classification of prisoners to avoid contact of minor or first offenders with the more hardened. (*c*) Better prison fare. (*d*) Abolition of solitary confinement in dark cells. (*e*) Lighting cells up to a reasonable hour at night and allowing well-conducted prisoners the privilege of reading interesting books. (*f*) Abolition of the practice of sending young children to gaol. (*g*) Attempt at scientific treatment of the habitual offender. (*h*) Special penitentiary for women prisoners. (*i*) Provisions for helping prisoners on leaving gaol to find work through the agency of the Discharged Prisoners' Aid Society. Assistance in this direction is also given by numerous clerical and lay helpers.

In 1902 the system of finger-print identification of criminals was introduced, and by the year 1903 bureaux had been established in the various States for the exchange of records. Very successful results have attended the introduction of the system.

Space will not permit of more than a passing reference to the improvements brought about in prison management in the other States. In Victoria there is an excellent system of classification and allocation of prisoners to different gaols, while at the important penal establishment at Pentridge a careful segregation into no less than five distinct classes is carried out. In common with the other States the latest humane methods of accommodation and prison treatment have for some time been employed.

Queensland prisons have been considerably modernised during the last few years. The prison for females at Brisbane has been built on the radiating plan, and embodies the latest ideas in penological methods. Classification of prisoners has been fully carried out in the male and female divisions of Brisbane prison, and at the Stewart's Creek penal establishment. The construction of the buildings does not, however, permit of the plan being adopted in its entirety in all Queensland prisons. It is stated by the Comptroller-General of Prisons that the classification adopted has already resulted in a decrease in the total number of female prisoners received.

Unusual circumstances have combined to keep crime at a low point in South Australia. In the first place there was never any transportation of criminals to the State,

while in the earlier years of its history South Australian lawbreakers were transported elsewhere. The present system was drafted mainly on English and European lines by the late W. R. Boothby, C.M.G., and under his directions and that of his successor has been found to work admirably.

There is no special information available with regard to the prison systems of Western Australia and Tasmania.

§ 5. Civil Courts.

1. **Lower Courts.**—The transactions of the lower courts on the civil side during each of the last five years are given in the table hereunder. As pointed out previously, the jurisdiction of the courts is by no means uniform in the various States. The figures, however, possess a certain value as indicating that, in comparison with other years, resort to litigation is on the decline in Australia.

LOWER COURTS.—CIVIL CASES, COMMONWEALTH, 1905 to 1909.

State.		1905.	1906.	1907.	1908.	1909.
New South Wales ...	Cases No.	22,497	20,573	26,548	30,472	32,637
	Amt. judg. £	*	*	63,350	83,372	87,432
Victoria	Cases No.	26,393	25,320	26,255	32,005	36,894
	Amount £	121,525	123,625	123,732	157,334	162,393
Queensland	Cases No.	10,061	10,311	10,304	12,016	12,244
	Amount £	36,553	36,408	35,576	42,863	43,363
South Australia ...	Cases No.	11,518	11,844	11,737	13,068	13,627
	Amount £	30,335	29,123	31,804	39,627	41,811
Western Australia ...	Cases No.	8,224	10,109	9,930	10,570	10,681
	Amount £	53,681	62,556	57,000	59,863	50,261
Tasmania	Cases No.	3,452	3,673	3,568	3,023	4,450
	Amount £	25,106	22,095	19,574	22,148	26,706
Commonwealth ...	Cases No.	82,145	81,830	88,342	101,154	110,533
	Amount £	†267,200	†273,807	331,036	405,207	411,966

* Not available. † Exclusive of New South Wales.

The figures just given represent the returns from Petty Sessions Courts in New South Wales and Victoria, the Petty Debts Cases in Queensland, the Local Courts of South Australia and Western Australia, and the Court of Requests in Tasmania.

2. **Superior Courts.**—In the next table will be found the transactions on the civil side in the Superior Courts during each of the years 1905 to 1909.

The New South Wales returns are to some extent defective, as the figures quoted for amount of judgments include in the case of the Common Law jurisdiction of the Supreme Court the total judgment signed, while in the case of the other States the figures refer to sums actually adjudged after trial. For New South Wales, also, the transactions of district courts refer to the total amounts sued for, and not the sums actually awarded after trial. Statistically the chief importance of the table consists in the fact that it shews a marked decline in litigiousness in Australia.

SUPERIOR COURTS.—CIVIL CASES, 1905 to 1909.

(COMMONWEALTH.)

State.		1905.	1906.	1907.	1908.	1909.
New South Wales	Causes No.	1,118	915	652	694	800
	Amt. judg. £	277,292	266,896	267,830	356,210	397,681
Victoria	Causes No.	678	620	694	783	733
	Amount £	51,467	50,194	46,070	77,081	59,785
Queensland	Causes No.	101	118	129	148	142
	Amount £	15,245	11,551	8,845	11,574	40,964
South Australia	Causes No.	22	32	29	27	34
	Amount £	1,229	2,207	8,986	5,378	14,081
Western Australia	Causes No.	621	595	541	449	414
	Amount £	74,431	62,770	67,946	63,649	60,537
Tasmania	Causes No.	249	136	189	215	178
	Amount £	9,283	4,083	7,907	10,589	6,243
Commonwealth	Causes No.	2,789	2,416	2,234	2,316	2,301
	Amount £	428,947	397,701	407,584	524,481	579,291

3. **Divorces and Judicial Separations.**—The number of divorces and judicial separations in each State during the period 1905 to 1909 is shewn below :—

DIVORCES AND JUDICIAL SEPARATIONS, 1905 to 1909.

(COMMONWEALTH.

State.	1905.		1906.		1907.		1908		1909.	
	Divorces.	Judicial Separations	Divorces.	Judicial Separation	Divorces.	Judicial Separations	Divorces.	Judicial Separations	Divorces.	Judicial Separations
New South Wales	176	15	175	10	223	14	195	15	275	12
Victoria	136	1	123	2	134	...	151	1	138	1
Queensland	5	1	14	3	12	1	11	2	16	...
South Australia	6	...	3	1	11	...	8	...	12	1
Western Australia	11	1	18	...	16	...	19	...	13	1
Tasmania	2	...	5	...	8	...	7	...	12	1
Commonwealth	336	18	338	16	404	15	391	18	466	16

The average annual number of divorces and judicial separations in the Commonwealth at decennial periods from 1871 to 1900 and for the nine years 1901 to 1909 given hereunder :—

DIVORCES AND JUDICIAL SEPARATIONS, 1871 to 1909.

	1871-1880.	1881-90.	1891-1900.	1901-9
Commonwealth	29	70	358	396

The bulk of the divorces and judicial separations refer, as the table shews, to New South Wales and Victoria, the Acts of 1892 and 1889 in the respective States making the separation of the marriage tie comparatively easy. In some statistical works it is customary to compare the divorces in any year with the marriages in the same year. The comparison is, however, quite valueless, as there is no necessary connection between the figures. Some value would attach to a comparison of the number of divorces with the number of married people living, but the latter information cannot be obtained with accuracy except at Census periods.

4. **Probates.**—The number of probates and letters of administration granted, together with the value of the estates concerned, is shewn below for each State for the period 1905 to 1909:—

PROBATES AND LETTERS OF ADMINISTRATION, COMMONWEALTH, 1905 to 1909.

State.		1905.	1906.	1907.	1908.	1909.
New South Wales	Number	2,804	2,852	3,084	3,094	3,185
	Value £	7,714,416	7,529,437	7,563,499	7,838,572	11,142,068
Victoria	Number	3,853	3,982	4,156	4,345	4,069
	Value £	6,003,478	6,424,738	6,860,143	7,128,085	6,480,376
Queensland	Number	584	602	1,160	706	679
	Value £	1,016,495	1,794,742	1,670,184	1,376,255	1,508,883
South Australia	Number	902	1,020	975	1,025	1,115
	Value £	1,294,968	2,041,280	1,923,954	2,105,351	1,939,509
Western Australia	Number	406	476	433	455	413
	Value £	676,920	544,245	1,154,126	955,995	939,318
Tasmania	Number	270	343	414	346	361
	Value £	504,196	862,222	841,227	1,023,629	722,011
Commonwealth	Number	8,819	9,275	10,222	9,971	9,822
	Value £	17,210,473	19,196,664	20,013,133	20,427,887	22,732,165

As may naturally be expected, the figures in the above table giving the value of property left each year, shew considerable variations.

5. **Bankruptcies.**—The returns in bankruptcy during each of the last five years are given hereunder.

For several reasons comparisons drawn from the figures in the following table are of little value. In the first place, the statements of assets and liabilities are notably unsatisfactory, particularly in regard to the former. Then, again, there is wide dissimilarity in regard to the laws in force in the various States and the method of procedure thereunder in connection with bankruptcy. Further, there are no means of knowing how many persons in each State who were in a bankrupt condition made private arrangements with their creditors either personally or by intervention of a solicitor. The figures quoted in the table exclude the private arrangements in Victoria and South Australia, and the liquidations in Queensland and Tasmania.

BANKRUPTCIES, COMMONWEALTH, 1905 to 1909.

State.		1905.	1906.	1907.	1908.	1909.
New South Wales	Number	421	406	333	356	381
	Liabilities £	289,220	179,740	219,669	322,850	168,169
	Assets £	160,123	93,201	152,454	185,507	82,563
Victoria	Number	570	517	448	514	370
	Liabilities £	235,773	231,828	196,879	179,050	129,627
	Assets £	74,673	81,144	53,849	62,998	98,041
Queensland	Number	259	307	236	303	323
	Liabilities £	61,827	45,583	42,348	70,064	63,321
	Assets £	14,634	7,045	8,475	10,031	34,541
South Australia	Number	39	93	99	105	108
	Liabilities £	11,680	59,412	59,681	142,450	64,775
	Assets £	6,102	44,781	33,029	92,719	42,340
Western Australia	Number	107	126	113	100	86
	Liabilities £	51,418	59,364	48 927	49,485	31.791
	Assets £	23,408	22,012	29,174	17,423	19,252
Tasmania	Number	4	5	7	1	5
	Liabilities £	1,019	2,340	7,529	...	3,903
	Assets £	187	1,440	1,756	...	954
Commonwealth	Number	1,400	1,454	1,236	1,379	1,273
	Liabilities £	650,937	578,267	575,033	763,899	461,586
	Assets £	279,127	249,623	278,737	368,978	277,691

6. **High Court of Australia.**—Under the provisions of section 71 of the Commonwealth Constitution Act, the judicial power of the Commonwealth is vested in a Federal Supreme Court, called the High Court of Australia, and in such other courts as the Parliament creates or invests with federal jurisdiction. The Federal High Court possesses both original and appellate jurisdiction, but so far its activities have been confined principally to the latter form. The powers of the court are defined in Chapter III. of the Constitution Act and in the Judiciary Act of 1903. At present the court consists of a Chief Justice and four other judges. Sittings of the court are held in the capitals of the various States as occasion may require. The following statement shews the transactions of the High Court for the quinquennium 1905-9:—

COMMONWEALTH HIGH COURT TRANSACTIONS, 1905 to 1909.

Items.	1905.	1906.	1907.	1908.	1909.
I. ORIGINAL JURISDICTION.					
Number of writs issued	16	23	38	30	27
Number of causes entered for trial	12	5	11	8	4
Verdicts for plaintiffs	11	5	7	4	3
Verdicts for defendants	1	1	4	5	1
Otherwise disposed of	3	6	17	11	17
Amount of judgments	£1,330	£2,395	£1,092	£1,058	£182
II. APPELLATE JURISDICTION.					
Number of appeals set down for hearing	89	93	72	87	76
Number allowed	41	42	34	31	40
Number dismissed	31	34	30	36	29
Otherwise disposed of	17	17	8	20	7
III. AMOUNT OF FEES COLLECTED.					
Amount in each year	£523	£566	£523	£558	£505

§ 6. Cost of Administration of Justice.

The table below shews the expenditure from Consolidated Revenue during each of the last five years in connection with the administration of justice in each of the States. Expenditure on police and prisons has been separately shewn. With regard to the figures quoted for "other" expenditure, a slight allowance has to be made for the fact that some extraneous expenditure has been included which it was found impossible to disentangle from the total, but the amount is in no instance large. Cost of buildings has been excluded from the return.

EXPENDITURE ON JUSTICE, COMMONWEALTH, 1905 to 1909.

State.		1905.	1906.	1907.	1908.	1909.
		£	£	£		£
New South Wales	Police	435,577	434,934	462,804	466,994	472,718
	Gaols	93,443	85,835	83,962	84,129	79,814
	Other	227,069	216,141	244,092	242,796	245,024
Victoria	Police	313,649	312,941	306,130	306,263	320,831
	Gaols	48,841	49,408	49,866	49,025	49,869
	Other	126,200	124,689	122,251	135,248	147,146
Queensland	Police	159,464	176,086	202,184	207,043	220,344
	Gaols	22,573	22,724	23,558	23,797	24,174
	Other	67,621	69,108	85,234	85,804	99,914
South Australia	Police	82,419	85,016	87,374	96,979	98,214
	Gaols	16,599	17,232	15,535	15,981	16,841
	Other	29,905	30,423	29,169	30,884	33,662
Western Australia	Police	126,661	126,276	125,440	124,518	119,111
	Gaols	31,610	32,719	32,206	32,638	28,536
	Other	64,746	64,607	61,533	69,761	66,072
Tasmania	Police	36,537	35,086	37,152	39,105	39,740
	Gaols	5,893	5,731	5,465	,795	5,698
	Other	17,267	20,911	18,610	16,901	14,511
Commonwealth	Police	1,154,307	1,1[illegible],339	1,221,084	1,240,902	1,270,958
	Gaols	218,959	[illegible],649	210,592	211,365	204,932
	Other	532,808	525,879	560,889	581,394	606,329

The expenditure shewn in the foregoing table is that expended by the State Governments only, and does not include expenditure in connection with the Federal High Court, which is shewn below for the period 1904-5 to 1909-10 :—

EXPENDITURE OF FEDERAL HIGH COURT, 1905 to 1910.

Year.	Amount.	Year.	Amount.
	£		£
1904-5	13,601	1907-8	23,230
1905-6	15,272	1908-9	24,037
1906-7	20,383	1909-10	23,677

For the purposes of comparison the figures in the first table above have been reduced to a population basis, and the results are given in the table hereunder:—

EXPENDITURE ON JUSTICE PER INHABITANT, COMMONWEALTH, 1905 to 1909.

State.		1905.	1906.	1907.	1908.	1909.
		s. d.	s. d.	s. d.	s. d.	s. d.
New South Wales	Police	5 11	5 9	5 9	5 11	5 11
	Gaols	1 3	1 2	1 1	1 1	1 0
	Other	3 1	2 10	3 1	3 1	3 1
Victoria	Police	5 2	5 1	4 11	4 10	4 11
	Gaols	0 10	0 10	0 9	0 9	0 9
	Other	2 1	2 0	2 0	2 2	2 3
Queensland	Police	6 1	6 7	7 6	7 6	7 10
	Gaols	0 10	0 10	0 10	0 10	0 10
	Other	2 7	2 7	3 2	3 1	3 6
South Australia	Police	4 5	4 6	4 6	4 11	4 9
	Gaols	0 11	0 11	0 10	0 10	0 10
	Other	1 7	1 7	1 6	1 7	1 8
Western Australia	Police	10 1	9 9	9 7	9 5	8 10
	Gaols	2 6	2 6	2 6	2 6	2 2
	Other	5 2	5 0	4 8	5 3	4 10
Tasmania	Police	4 1	3 11	4 2	4 4	4 4
	Gaols	0 8	0 8	0 7	0 8	0 7
	Other	1 11	2 4	2 1	1 10	1 7
Commonwealth	Police	5 9	5 9	5 9	5 10	5 11
	Gaols	1 1	1 0	1 0	1 0	0 11
	Other	2 8	2 7	2 8	2 9	2 10

The total expenditure in the Commonwealth in connection with the administration of justice has fallen from ten shillings per inhabitant in 1901 to nine shillings and eightpence in 1909. Police expenditure has increased by about twopence per head, the average for gaols is about twopence per head less, while the expenditure on courts and the remaining machinery of justice has fallen by fourpence per head, during the same period.

SECTION XXIV.

PUBLIC BENEVOLENCE.

§ 1. Introductory.

1. **General.**—Charity and charitable effort in Australia may be classified under three headings, viz.:—(*a*) State; (*b*) public; (*c*) private. To the first belong all institutions wholly provided for by the State, such as the principal lunatic asylums in the various States, the Government hospitals in Western Australia, and the Government asylums for infirm in New South Wales. The second class includes public institutions of two kinds, viz.:—(i.) Institutions partially subsidised by the State or State endowed, but receiving also private aid, and (ii.) those wholly dependent upon private aid. To the former division belong such institutions as the Melbourne and other large metropolitan hospitals. In the latter are included institutions established and endowed by individuals for the benefit of the needy generally. All charitable movements of a private or special character are included in the third group.

A more or less accurate statistical account is possible in classes (*a*) and (*b*), but in regard to (*c*) complete tabulation is, for obvious reasons, impossible. Moreover, public response to special appeals, and summary relief in kind, cannot be statistically recorded. Hospitals, orphanages, homes, benevolent asylums, etc., naturally attract the largest share of charitable aid. There are, nevertheless, numerous other and minor charities which mark the course and measure the amount of a considerable volume of private beneficence. In institutions which receive Government aid, management and finance are usually relegated to executive bodies, ordinarily elected on a democratic basis.

The distribution of wealth in the Australian Commonwealth, and the generally favourable conditions, as regards scope for the exercise of natural ability, operate to prevent the development of a permanent pauper class, and at the same time lessen in a dual way the burden of charity. This latter is brought about by the increase, on the one hand, of the number of people whose prosperity enables them to relieve the indigent and unfortunate, and by the reduction, on the other, of the number who need assistance. Enactments of State Legislatures have decreed short hours and a liberal holiday allowance for large numbers of persons engaged in industrial and other pursuits, and, even in occupations not covered by Act of Parliament, the general conditions of employment often provide a considerable amount of leisure. This, coupled with an equable climate, enables the community to spend much of its time in the open air, with resultant advantages to its physique and general health. No poor-rate is levied in Australia, and Government aid without return is required only for the aged and disabled. Moreover, although Old Age Pensions are paid by the Commonwealth, the payments are looked upon rather in the light of a citizen's right than as a charity. Reference to the Old Age Pensions will be found in § 3, Miscellaneous, chap. xxxi.

To meet temporary conditions, or rather, what ought to be temporary conditions, various relief works have been started from time to time, in which the able-bodied who may be forced to seek official relief are required to make some return for the assistance afforded. In the past, attempts to relieve the unemployed have led to large expenditures, but at the present time the entire scheme of such relief is on an altogether more satisfactory footing.

In each of the States there are Governnent asylums for the care of the insane, and the condition of these unfortunates has been steadily ameliorated by the general advance in psychiatry.

Young children deprived of parental training and control are cared for and educated in "orphanages" and "industrial schools," and those who have been guilty of some specific offence, or who are beyond adequate parental control, are committed to "reformatories."

In common with other civilised communities, relief funds have from time to time been organised for famine-stricken territories (*e.g.*, China, India, etc.), or for places where plague, flood, fire, or earthquake has shewn the need of urgent relief. Statistical information in regard to this form of charity is not, however, available. It may be mentioned that the Daily Press frequently accepts the duties of collectorship in charity appeals.

2. **Charity Reforms.**—The evident overlapping of charitable effort has on various occasions led to discussion regarding methods of collection and distribution of aid, and has, moreover, given rise to a desire for improved administration. In this connection, an important conference of representatives of charitable associations was held in Melbourne in September, 1907, with the object of systematically digesting the experiences of the committees of management of the various hospitals and kindred institutions. These obtain their revenue from State and municipal subsidies, from proceeds of concerts, entertainments, etc., from organised public collection, from private contributions and bequests, and from patients. Some of the institutions also have paid or honorary collectors. As a result of the investigations of this Conference, it was found (*a*) that institutions of a similar character were competing with each other; (*b*) that public aid was not effectively dispensed; (*c*) that public eleemosynary impulse was prejudiced by the circumstance that institutions primarily intended for the poor and needy were being utilised by people who could afford to pay for private relief, particularly in regard to medical or surgical treatment. One important result of this Conference was the formation of societies to prevent overlapping.

Other proposed reforms aim at ascertaining the causes of poverty and crime, and finding the necessary palliative. Increased provision of better houses and workrooms and improved sanitation are advocated, together with more stringent legislative measures to enforce cleanliness and healthy modes of life. In addition, further Factories Legislation, Pure Food and Health Acts, and provisions for safeguarding dangerous machinery and permitting only competent persons to be employed thereon, are also advocated.

3. **Difficulties of General Tabulation.**—Differences in the organisation of charities prevent uniform tabulation of statistics for all the States, but certain of the larger features of the statistics of benevolence have been combined for the whole Commonwealth. Combinations for the whole of Australia for the five years ended 1909 are given for hospitals, benevolent asylums, orphanages, and hospitals for the insane. Satisfactory tabulation for other charities is not yet possible. Where the combination has been for dissimilar periods the nearest years have been taken, and in some cases, where information has not been forthcoming, figures for the previous year have been repeated. As a result of the effort to standardise the information, emendations have been made in the figures published in the preceding Year Books, whereby it is believed a more satisfactory basis of comparison has been established.

§ 2. The Larger Charities of Australia.

1. **Hospitals.**—Most of the State capitals have several large and well-equipped hospitals, and there is at least one in every important town. In large centres there are hospitals for consumptives, women, children, infectious diseases, incurables, etc. The number of hospitals in Australia, with the admissions, patients treated, deaths, and expenditure, are shewn in the following table. The "special" hospitals are included in the returns for 1905 and 1906, but in 1907, 1908, and 1909 only general hospitals are tabulated. In 1909, the figures for assisted hospitals in Western Australia are available for the first time.

HOSPITALS IN THE COMMONWEALTH, 1905 to 1909.

Particulars.	1905.	1906.	1907.	1908.	1909.
Number of institutions	308	313	304	312	337
Number of beds	11,778	12,108	11,463	12,057	11,384
Admissions during year	94,117	99,308	98,031	107,292	89,650
Indoor patients treated	101,200	106,488	104,483	114,668	96,748
Deaths	7,476	7,627	8,005	8,560	6,967
Expenditure ... ... £	602,394	612,628	639,002	758,993	775,811

In addition to those admitted to the institutions there are large numbers of out-patients. The exact number of these cannot be given, but a rough estimate of distinct cases for 1909 places the total at about 280,000.

Fuller details of hospital statistics are given for 1909 in the table below, the States of the Commonwealth being shewn separately :—

GENERAL HOSPITALS.—NUMBER, STAFFS, AND ACCOMMODATION OF HOSPITALS IN THE COMMONWEALTH, 1909.

Particulars.	N.S.W.*	Victoria.	Q'land.	S.A.	W.A.†	Tas.	Cwlth.
Number of Hospitals—							
Government	3	...	2	8	48	} 13	} 337
Other	136	47	75	5	...		
Total	139	47	77	13	48	13	337
Medical Staff—							
Males	492	§	155	78	46	§	771‖
Females	3	§	10	4	...	§	17‖
Total	495	§	165	82	46	§	788‖
Nursing Staff & Attendants—							
Males	100	24	125	53	60	§	362¶
Females	1,229	593	567	318	280	§	2,987¶
Total	1,329	**617	692	371	340	§	**3,349¶
Accommodation—							
Number of dormitories, etc.	800	432	491	99	142	111	2,075
Capacity in cubic feet	5,633,494	4,283,306	3,133,503	1,215,703	1,223,357	694,417	16,183,780
Number of beds	4,616	3,202	2,532	812	1,143	325	12,630
Cubic feet to each bed ...	1,220	1,338	1,238	1,497	1,070	2,137	1,281

* Exclusive of homes for consumptives, and women's hospitals doing general as well as maternity work. † Inclusive of assisted hospitals. § Information not available. ‖ Exclusive of Victoria and Tasmania. ¶ Exclusive of Tasmania. ** Exclusive of 1060 paid staff: sexes not stated.

GENERAL HOSPITALS.—PATIENTS TREATED IN HOSPITALS IN THE COMMONWEALTH, 1909.

Particulars.	N.S.W.*	Vic.	Qld.	S.A.	W.A.	Tas.	Cwlth.
Indoor Relief: Distinct Persons Treated—							
Males	27,258	14,928	15,878	3,600	5,949	2,617	70,230
Females	23,283	10,262	7,662	2,662	2,915	1,914	48,698
Total	50,541	25,190	23,540	6,262	8,864	4,531	118,928
Inmates at beginning of Year—							
Males	1,546	1,356	917	277	438	176	4,710
Females	1,264	853	446	189	191	118	3,061
Total	2,810	2,209	1,363	466	629	294	7,771
Admissions & Re-admissions during Year—							
Males	25,712	13,572	14,961	3,686	5,511	2,692	66,134
Females	22,019	9,409	7,216	2,590	2,724	2,010	45,968
Total	47,731	22,981	22,177	6,276	8,235	4,702	112,102
Discharges—Recovered:							
Males	18,039	11,369	13,486	2,179	2,899	2,489	50,461
Females	17,060	8,177	6,565	1,467	1,406	1,793	36,468
Total	35,099	‡19,546	‡20,051	3,646	4,305	‡4,282	86,929
Relieved:							
Males	4,693	†	†	836	2,021	†	§7,550
Females	3,207	†	†	655	1,036	†	§4,898
Total	7,900	†	†	1,491	3,057	†	§12,448
Unrelieved:							
Males	698	161	285	283	132	37	1,596
Females	511	133	158	232	65	38	1,137
Total	1,209	294	443	515	197	75	2,733
Not stated:							
Males	...	302	125	9	60	57	553
Females	...	129	23	6	34	55	247
Total	...	431	148	15	94	112	800
Deaths—							
Males	2,056	1,694	1,006	348	484	198	5,786
Females	1,138	896	422	213	197	162	3,028
Total	3,194	2,590	1,428	561	681	360	8,814
Inmates at End of Year—							
Males	1,772	1,323	976	308	353	170	4,902
Females	1,367	823	494	206	177	139	3,206
Total	3,139	2,146	1,470	514	530		8,108
Average Daily Number Resident—							
Males	1,524	¶		299		189	¶
Females	1,295	¶		233	200	141	¶
Total	2,819	2,241	1,469	532	627	330	8,018

* Inclusive of homes for consumptives, women's hospitals doing general as well as maternity work, and maternity homes. † Included in recovered. ‡ Including relieved. § Cases relieved are included in those recovered, in Victoria, Queensland and Tasmania. ¶ Information not available.

The revenue and expenditure of the institutions were as follows:—

GENERAL HOSPITALS.—REVENUE AND EXPENDITURE, 1909.

Particulars.	N.S.W.*	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Cwlth.
Revenue—	£	£	£	£	£	£	£
Fees of patients, etc. ...	41,159	19,392	15,400	3,373	11,116	8,398	98,838
Government grants ...	143,966	58,692	72,152	39,157	62,599	17,195	393,761
Other	111,406	105,452	57,041	11,715	13,867	3,208	302,690
Total	296,531	183,536	144,593	54,245	87,582	28,801	795,289
Expenditure—							
Salaries	99,695	159,355	55,754†	16,458	86,086	20,791	805,787
Maintenance	123,275		72,739	27,469			
Other	66,991	30,251	18,048‡	20,538§		8,337	
Total	289,961	189,606	146,541	64,465	86,086	29,128	805,787

* Exclusive of hospitals for convalescents and consumptives, and maternity homes, in 1907; but including homes for consumptives in 1908. † Including rent. ‡ Including administration. § Including buildings, £19,306.

2. **Hospitals for General and Special Cases.**—The tables here given refer to general hospitals. In addition there are hospitals for "specials," (such as women's, children's, and infectious diseases hospitals), and institutions nearly allied to hospitals (such as consumptive sanatoria). In the first and second numbers of the Commonwealth Year Book, these were tabulated with general hospitals. Where the institutions carry on general hospital relief, they are still included with those establishments.

(i.) *New South Wales.* A feature of the last decade has been the establishment of hospitals in many country towns of growing importance. In 1898, there were 13 metropolitan and 97 country hospitals; in 1909 these had increased to 21 and 120. A government hospital is established at Little Bay. There are four women's and one children's hospitals in the metropolis. Other leading institutions are the Thomas Walker Convalescent Hospital, Dental Hospital, Home for Incurables, Hospital for Infants and Asylum for Women and Children, Infants' Home, etc.

(ii.) *Victoria.* Special hospitals, not included in the above tabulation, comprise the Women's Hospital, with infirmary and midwifery departments, the Children's Hospital, the Hospital for Women and Children, two Consumptive Sanatoria (one a Government institution), Inebriates' Institute, Convalescent homes, etc.

(iii.) *Queensland.* There are four lying-in and two children's hospitals in Queensland, and a sanatorium; also two lock hospitals, established under the provisions of the Contagious Diseases Act of 1868.

(iv.) *South Australia.* In connection with the leading general hospital in the metropolis, there is a consumptive home and infectious diseases block; there are also a children's hospital, two lying-in homes, sanatorium, convalescent home, home for incurables, etc.

(v.) *Western Australia.* The leading general hospitals are Government establishments. There is a lying-in establishment in connection with the metropolitan women's home, and in other places, a home for the dying and incurable, homes and rests for sailors, strangers, etc.

(vi.) *Tasmania.* Included in the Tasmanian general hospitals are two which pay particular regard to "special cases"; these are the hospital for contagious diseases (a

Government institution) and the convalescent home. Other important institutions of a general nature are the New Town charitable establishment, and the invalid depôt.

3. **Benevolent and Destitute Asylums.**—A marked increase has taken place in the amount of aid bestowed upon the aged. Two elements, each of them independent of the growth of population, have influenced this increase. One is, that the general age of the community has advanced,—the large flow of immigration of fifty and sixty years ago having been mostly of persons in the prime of life; the other is the increased regard paid in all British communities to the well-being of the helpless. The result in Australia has been that numerous establishments have been founded for the housing and protection of such as are no longer able to care for themselves. The institutions are supported by Government and municipal aid, public subscriptions, charity performances, bequests, etc., and in many cases relatives of indigent and afflicted persons contribute to their maintenance.

The impossibility of an entirely satisfactory statistical tabulation in regard to all forms of charitable aid, is especially marked in the case of benevolent institutions, since the conditions under which they have been established in the different centres in the Commonwealth have caused divergence in their development and in the classes of cases treated by them. For example, in Western Australia the Home for Destitute Women includes a maternity ward, for which the statistics are not separately kept. Since the predominating function of the Institution is aid to the destitute, it has been included among benevolent asylums. In Victoria, nine of the hospitals are also Benevolent asylums, and they are included wholly under the former. In South Australia, the Destitute Asylum includes lying-in and children's departments.

BENEVOLENT INSTITUTIONS.—REVENUE AND EXPENDITURE, 1909.

Particulars.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	Cwlth.
Revenue—	£	£	£	£	£	£	£
Government aid	84,374	30,100	35,108	17,964	22,288	4,719	194,553
Municipal aid	...	1,289	...	...	...	...	1,289
Public subs., legacies, etc....	2,957	11,114	680	...	...	85	14,836
Fees	...	2,527	...	515	...	...	3,042
Other	7,456	3,674	377	322	645	1	12,475
Total...	94,787	48,704	36,165	18,801	22,933	4,805	226,195
Expenditure—							
Buildings	3,076	27,693	51	151	...	36	31,007
Maintenance	88,872	35,913	35,581	18,650	21,632	4,255	204,903
Other	2,012	259	119	...	1,301	514	4,205
Total...	93,960	63,865	35,751	18,801	22,933	4,805	240,115

(i.) *Government Asylums for the Infirm, New South Wales.* There are six of these institutions in New South Wales, with something over 4000 beds, generally nearly all in use. The average number resident in 1909 was 3606. Deaths in 1909 numbered 875, and the expenditure amounted to £73,131.

(ii.) *Benevolent Asylums, Victoria.* Besides the asylums attached to hospitals, there are eight institutions in Victoria. The daily average number indoors was 2421 for 1908-9, with 1780 distinct cases of outdoor relief. Deaths numbered 448. The total expenditure was £62,865, and receipts £48,704—£30,100 from Government and £18,604 from other sources.

(iii.) *Benevolent Asylums, Queensland.* There are four institutions in Queensland, with 1259 beds. The total number in the asylums during 1909 was 1681, with a daily average of 1144. Deaths numbered 157. Expenditure amounted to £20,997, and receipts to £21,412, of which £20,355 was Government aid.

(iv.) *Destitute Asylum, Adelaide.* Outside of hospitals and lunatic asylums the destitute of South Australia are dealt with and relieved at the Destitute Asylum, Adelaide. The institution includes lying-in and children's departments. In the asylum the average number of inmates in 1908-9 was 401. There were seventy-eight deaths during the year. Expenditure totalled £6631. In addition, £12,394 was dispensed through the institution for outdoor relief of the destitute in both metropolitan and rural districts.

(v.) *Homes for the Destitute, Western Australia.* There are four of these homes in Western Australia supported by public funds. Attached to the Perth Women's Home is a lying-in department. Outdoor relief to the poor and aged is given, the amount expended being included in expenditure in the above table. More than sixteen hundred cases were dealt with during 1908, with a daily average of 656. There were ninety-eight deaths.

(vi.) *Charitable Establishments, Tasmania.* There are two principal Government charitable establishments in Tasmania. Beds numbered 449 in 1909. The total number of persons treated was 690, of whom 112 died. The daily average resident was 329. Total expenditure was £5232, receipts amounting to the same sum, of which £4787 was contributed by the State.

4. **Orphanages, Industrial Schools, etc.**—The organisation of charitable effort varies greatly in regard to orphans and waifs. In many institutions shelter and some form of industrial training is offered to destitute children of all classes, whether orphans or not, while some of those styled orphanages do not confine their relief to orphans strictly so called. The figures in the next table are those for institutions where, it is believed, the principal effort is on behalf of those who are really orphans:—

ORPHANAGES IN COMMONWEALTH, 1905 to 1909.

Particulars.	1905.	1906.	1907.	1908.	1909.
Number of institutions	38	38	38	38	42
Admissions	1,286	1,333	1,465	1,393	1,613
Total number of inmates during year ...	4,887	4,868	5,081	4,078	5,150
Deaths	17	15	17	19	14
Expenditure	60,564	61,098	62,439	65,154	61,088

(i.) *New South Wales.* The care of destitute and neglected children is entrusted to the State Children's Relief Board, whose officers are charged with a strict supervision regarding the welfare of the children and the relation to them by those to whom they are boarded out. Useful trades and profitable occupations are taught, and many of the children become useful members of society. The number of children under the board's supervision in 1909-10 was 4390. The board's expenditure in 1909-10 was £88,845, or £20 5s. per child.

There are also thirteen orphanages, with about 800 persons under care. Deaths are but one or two annually, and the yearly expenditure fluctuates between £7300 and £10,000.

New South Wales has three reformatory institutions—the Carpenterian State Reformatory, and the "Sobraon" State Training Ship for boys, the enrolment for 1909 being 101 and 357 respectively; and the Giri's State Industrial School, where for the same year the enrolment was 135.

The Training Ship has attained very satisfactory results. In forty years more than 5000 boys have been dealt with, and the records shew that 98 per cent. of these have developed into good citizens. Attached to the "Sobraon" is the steam and sailing schooner "Dart," where the boys are taught seamanship. The boys subjected to a course of training are, at the expiration of their term, apprenticed to approved persons. To the Carpenterian Reformatory are sent boys who have been convicted in the courts, whom it is desired to keep apart from other prisoners, and who are taught useful trades.

(ii.) *Victoria.* There are ten orphanages in Victoria, with 1564 beds. The total number under care in 1909 was over 2000. Average annual admissions are about 500. Deaths numbered four in 1909. The annual expenditure is about £23,000.

At the end of 1909 there were three industrial and eleven reformatory schools in the State. Of these, one industrial and one reformatory school are wholly controlled by the Government, being used merely as receiving and distributing depôts. The children are sent thence to foster homes, situations or other institutions dealing with State wards. The other schools are under private management, receiving an allowance for State wards. Many of the reformatory children are placed with friends or licensed out. On 31st December, 1909, the wards of the State numbered 6221—comprising 6007 neglected and 214 reformatory children. There were also 42 children free from legal control, who, being incapacitated, were maintained by the State. The total expenditure for 1909 was £79,182, of which £76,457 was borne by the Government.

A training ship has been purchased and equipped. The beneficial results of the system experienced in New South Wales are expected to follow in Victoria.

(iii.) *Queensland.* There are seven orphanages in Queensland with over 1000 beds. The number under care is about 1500, deaths averaging six per annum. The expenditure in 1909 was £28,637.

There are also six industrial and reformatory schools. The total number of children under State control at the end of 1909 was 2627. The gross cost was £27,881 of which £25,546 was borne by the Government.

(iv.) *South Australia.* The State Children's Department exercises a supervision over the probationary and industrial schools, the reformatories, and the Methodist Home. The total number of admissions into these institutions in 1908-9 was 175. The number of inmates on the 30th June, 1909, was 180, in addition to which 1203 were placed out, or had been adopted or apprenticed. There were four deaths of children in industrial schools, and seven of those placed out and in other institutions. The number of children under State control on 30th June, 1909, was 1511. The expenditure for 1908-9 was £20,305 in gross, of which the Government aid was £18,298.

(v.) *Western Australia.* In Western Australia there were, in 1908, eight orphanages (including industrial orphanage schools). The admissions during the year were 152, and the number in institutions on 31st December was 462. There were three deaths during the year. The State expenditure was £10,512.

In the Government Industrial School there were, at the end of 1908, 23 inmates, 180 having been admitted during the year. Five deaths occurred. At the end of 1909 655 children were under State control. The net cost to the State was £11,014, parents' contributions amounting to £502.

(vi.) *Tasmania.* There were three admissions to the orphanage in 1908 and forty-three inmates during the year. No deaths occurred. Expenditure amounted to £526.

There are three industrial schools under benevolent institutions in the State. Admissions in 1908 numbered seventeen, and total inmates during the year 106. One death occurred. The expenditure was £2387.

Under the boarding-out system an annual average of 140 children are placed out at an annual average expenditure of £1610. The total number of children under State control at the end of 1909 was 285, the gross cost to the State of children's relief being £2788, of which £274 represents parents' contributions.

The following table summarises the number of neglected children under State Departments. In New South Wales a number of children are boarded out with their own mothers. The inclusion of these would make the total number of children in that State 8487.

STATE RELIEF OF NEGLECTED CHILDREN.—TRANSACTIONS OF STATE DEPARTMENTS IN THE COMMONWEALTH (EXCLUSIVE OF TASMANIA), 1909.

Particulars.	N.S.W.*	Vict.	Qld.	S.A.†	W.A.	Tas.	Cwlth.
Number of Children under State control at end of year—							
Males	2,539	3,248	1,296	808	385	182	8,458
Females	1,851	2,973	1,331	703	270	103	7,231
Total	4,390	6,221	2,627	1,511	655	285	15,689
	£	£	£	£	£	£	£
Gross cost to State of children's relief	93,543	79,182	27,881	20,305	11,014	2,788	234,713
Receipts, from parents' contributions, etc.	3,419	2,725	2,335	2,007	502	274	11,262
Net cost	90,124	76,457	25,546	18,298	10,512	2,514	223,451

* For year ended 5th April following. † For year ended 30th June following.

5. **Lepers.**—Lazarets for the treatment of lepers have been established in New South Wales (Little Bay); Queensland (Stradbroke Island, near Brisbane, and Dayman Island, Torres Straits); and the Northern Territory of South Australia (Mud Island). Quarantine and isolation stations have also been used for the segregation of patients. A great deal of information concerning the beginning and progress of leprosy in Australia has been collected and published by Dr. J. Ashburton Thompson, Chief Government Medical Officer and President of the Board of Health, New South Wales, from whose reports the following table has been compiled:—

CASES OF LEPROSY RECORDED IN THE COMMONWEALTH, 1855 to 1908.

State.	1855 to 1904.	1904.	1905.	1906.	1907.	1908.	Total.
New South Wales	116	8	9	7	4	2	146
Victoria	*26	—	1	—	—	—	*27
Queensland	†136	17	19	14	21	23	†230
South Australia	36	—	1	—	1	—	38
Western Australia	4	—	—	—	—	3	7
Tasmania	—	—	—	1	—	—	1
Total	*†318	25	30	22	26	28	*†449

* In addition, some Chinese. † In addition, many Kanakas.

6. **Hospitals for the Insane.**—The method of compiling insanity statistics has been fairly uniform throughout the States, but the various methods of observing the early stages of the development of insanity introduce an element of uncertainty which considerably reduces the value of comparison. In the summary given below licensed houses (except as regards expenditure) are included for New South Wales throughout, and the number in Victoria is included in 1907, 1908, and 1909, but the figures are exclusive of reception houses and observation wards in gaols :—

HOSPITALS FOR INSANE, COMMONWEALTH, 1905 to 1909.

Particulars.	1905.	1906.	1907.*	1908.*	1909.*
Number of institutions	27	27	30†	30†	31†
Number of beds	13,144	13,507	13,238	14,317	14,546
Admissions	2,593	2,839	2,583	2,638	2,740
Total number under treatment	16,462	16,803	17,000	17,373	17,915
Discharged as recovered, relieved, or improved	1,183	1,258	1,216	1,159	1,200
Deaths	966	1,003	1,018	1,071	1,046
Expenditure ... ... £	387,395	404,354	500,168	511,468	514,531

* Exclusive of receiving wards at two general hospitals, previously included. † Includes five licensed houses for insane in Victoria.

The proportion of insane, as well as the total number returned as under treatment, is gradually rising. In the next table the number of insane under official care in Australia is given, and in the table following the proportion of insane to population.

The number of insane persons in institutions in Australia at the end of each of the past five years was as follows :—

INSANE PERSONS IN THE COMMONWEALTH, 1905 to 1909.

State.	1905.	1906.	1907.	1908.	1909.
New South Wales	5,193	5,422	5,509	5,673	5,902
Victoria	4,768	4,876	4,969	5,014	5,097
Queensland	1,938	2,029	2,069	2,184	2,227
South Australia	983	994	1,019	1,051	1,051
Western Australia	494	546	630	707	782
Tasmania	475	482	502	507	506
Commonwealth	13,851	14,349	14,698	15,136	15,565

For the period embraced in the tables Victoria shews the highest rate of insanity, roughly one in 250 persons. It is stated that this is chiefly owing to the proportionately greater number of old persons in that State. On the other hand, in Western Australia, where the population is much younger, a considerably lower insanity rate has prevailed, being about one in 500 in 1905 and 1906, about one in 400 in 1907 and 1908, and about one in 350 in 1909.

PROPORTION OF INSANE, COMMONWEALTH, 1905 to 1909.

State.	1905.	1906.	1907.	1908.	1909.
	PER 1000 OF THE POPULATION.				
New South Wales	3.49	3.55	3.51	3.56	3.64
Victoria	3.91	3.96	3.98	3.94	3.91
Queensland	3.67	3.79	3.82	3.96	3.89
South Australia	2.60	2.59	2.59	2.58	2.53
Western Australia	1.94	2.08	2.41	2.65	2.86
Tasmania	2.62	2.62	2.73	2.73	2.70
Commonwealth	3.42	3.48	3.50	3.54	3.56

Increase in the number of recorded cases of insanity does not necessarily imply an actual increase, and does not here imply an equivalent increase. Consequent upon the development of a more rational attitude to the treatment of mental cases there is growing up a greater willingness to submit necessary cases to treatment at an earlier stage than formerly. It is important to bear this in mind, because the small progressive increase in the preceding table is probably to be attributed largely, if not solely, to this circumstance. The increase in expenditure is another evidence of the greater care bestowed on the insane.

The leading features in regard to institutions for the care of the insane are given below for 1909:—

HOSPITALS FOR THE INSANE.—NUMBER, STAFFS, AND ACCOMMODATION, COMMONWEALTH, 1909.

Particulars.	N.S.W.	Vict.*	Qld.	S.A.	W.A.	Tas.	Cwlth.
Number of Institutions—							
Government	7	8	3	1	2	1	22
Private	3	5†	...	...	1	...	9†
Total	10	13	3	1	3	1	31
Medical Staff—							
Males	16	18	5	2	3	‡	44§
Females	1	...	...	...	...	‡	1§
Total	17	18	5	2	3	‡	45§
Nursing Staff & Attendants—							
Males	435	416	121	62	72	‡	1,106§
Females	322	412	76	51	32	‡	893§
Total	757	828	197	113	104	‡	1,999§
Accommodation—							
No. of dormitories ...	¶302‖	1,327	727	‡	26	369	‡
Capacity in cubic feet ...	¶3,114,177‖	3,357,083	1,295,319	‡	512,383	1,434,326	‡
No. of beds	5,277	4,699	2,197	1,115	725	533	14,546
Cubic feet to each bed ...	¶600§ ¶1,000**	714	590	‡	707	2,691	‡

* Exclusive of Receiving House, Royal Park, and of the Receiving Wards at Bendigo and Geelong hospitals. † There are five private licensed houses in Victoria, in which there were 111 cases at end of 1909. Other figures for these private asylums are not available. ‡ Information not available. § Exclusive of Tasmania. ‖ Figures for 1907. ¶ Government hospitals only. § Ordinary dormitory. ** Hospital dormitory.

HOSPITALS FOR THE INSANE.—PATIENTS TREATED, 1909.

Particulars.	N.S.W.	Vic.*	Q'ld.	S.A.	W.A.	Tas.	Cwlth.
No. of distinct persons treated during year							
Males	4,004	3,027	1,600	729	668	323	10,351
Females	2,739	2,768	951	564	261	281	7,564
Total	6,743	5,795	2,551	1,293	929	604	17,915
Admissions & re-admissions during year—							
Males	648	455	245	132	156	35	1,671
Females	422	310	122	110	69	36	1,069
Total	1,070	765	367	242	225	71	2,740
Discharges—Recovered:							
Males	216	138	91	1	38	12	496
Females	186	100	50	...	23	8	367
Total	402	238	141	1	61	20	863
Relieved and unrelieved:							
Males	47	36	37	71	10	2	203
Females	40	35	17	71	5	11	179
Total	87	71	54	142	15	13	382
Absconders:							
Males	2	17	...	2	3	...	24
Females	...	1	...	...	...	...	1
Total	2	18	...	2	3	...	25
Deaths:							
Males	229	224	89	58	40	15	655
Females	121	147	40	39	27	17	391
Total	350	371	129	97	67	32	1,046
Inmates at end of year:							
Males	3,510	2,612	1,383	597	579	261	8,942
Females	2,392	2,485	844	454	203	245	6,623
Total	5,902	5,097	2,227	1,051	782	506	15,565
Average daily number resident:							
Males	3,362	2,379	1,370	593	544	254	8,502
Females	2,237	2,274	835	457	209	246	6,258
Total	5,599	4,653	2,205	1,050	753	500	14,760

* Exclusive of inmates of the Receiving House, Royal Park, and of Receiving Wards attached to the hospitals at Bendigo and Geelong, and of five private licensed houses.

In some of the States it is the practice to allow persons well advanced towards recovery to leave the institutions and reside with their relatives or friends, but they are nevertheless under supervision of the asylum authorities and are kept on the books. These patients are shewn in the above table as inmates. In nearly every case absconders are retaken. They are shewn above as readmitted.

The revenue of Government asylums is small in comparison with their cost, and consists chiefly of patients' fees. The proportion of expenditure borne by the States amounts to about 88 per cent.

HOSPITALS FOR THE INSANE (GOVERNMENT ONLY), REVENUE AND EXPENDITURE, 1909.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
Revenue—	£	£	£	£	£	£	£
Fees of patients ...	29,765	22,176	6,623	6,515	3,541	4,580	73,200
Other	1,617	...	1,598	...	781	233	4,229
Total	31,382	22,176	8,221	6,515	4,322	4,813	77,429
Expenditure—							
Salaries	69,419	163,117	49,334	12,420	14,577	14,041	452,192
Maintenance	*98,532			16,877	13,875		
Other	†15,487	‡41,314	330	...	34	§5,174	62,339
Total	183,438	204,431	49,664	29,297	28,486	19,215	514,531

* Lunacy patients only. † Including £5869 expenses of Government hospital at Morisset.
‡ Buildings and repairs. § Including £222 for buildings.

(i.) *New South Wales.* The average length of residence in the hospitals of persons who died during the year was 4 years 8 months for males and 5 years 9 months for females; and that of persons who were discharged during the year was 1 year 2 months for males and 1 year 7 months for females.

There are also two State reception houses, where suspected persons are confined for observation, being subsequently either discharged or transferred to lunatic asylums. In two of the gaols observation wards have been instituted, with similar functions.

(ii.) *Victoria.* The average residence in the hospitals of those who died was 6 years 11 months for males, and 9 years 9 months for females; that of those discharged, 1 year 1 month for males, and 1 year 6 months for females.

There are also lunacy wards in two of the general hospitals. On 24th September, 1907, a State receiving house was opened, where persons are placed for observation, and subsequently discharged or transferred to asylums.

(iii.) *Queensland.* The average residence in the institutions of those who died was 6 years 1 month for males and 9 years 4 months for females; and for those who were discharged, 1 year 2 months for males and 2 years 1 month for females.

There are also three reception houses for insane, which act as depôts to which patients are sent to see whether their mental illness is of a merely temporary character, readily to be relieved, or is of such a nature as to need further treatment at the State asylums.

(iv.) *South Australia.* The average residence of those who died was 7 years for males and 6 years 9 months for females; of those discharged, 10 months for males and 8 months for females.

(v.) *Western Australia.* The period of residence of those who died during the year averaged 3 years 9 months for males and 2 years 3 months for females; of those who were discharged, 1 year 1 month for males and 10 months for females.

Particulars of the New Norfolk Asylum, Tasmania, are not available for 1909.

(vi.) *Causes of Insanity.* The proportion of causes of insanity to the total of ascertained causes in Australia in 1907, 1908, and 1909 shows that hereditary influences have been the chief factor, one-fifth of the total ascertained causes coming under this head. Domestic troubles, adverse circumstances, etc., have also been a fruitful source. About one case in eight was due to intemperance in drink.

PROPORTION OF ASCERTAINED CAUSES OF INSANITY, COMMONWEALTH, 1907, 1908, and 1909.

Causes.	1907.	1908.	1909.
	Per cent.	Per cent.	Per cent.
Domestic trouble, adverse circumstances, mental anxiety ...	14.7	14.5	11.5
Intemperance in drink	13.7	12.9	10.1
Hereditary influence, ascertained; congenital influence, ascertained	20.3	18.8	15.0
Pregnancy, lactation, parturition and puerperal state, uterine and ovarian disorders, puberty, change of life	8.2	6.8	6.4
Previous attacks	11.0	13.5	12.0
Accident, including sunstroke	4.3	4.0	3.0
Old age	7.7	8.0	9.7
Other causes ascertained	20.1	21.5	32.3
All ascertained causes	100.0	100.0	100.0

7. **Treatment of Inebriates.**—The treatment of inebriates is referred to in the section dealing with Public Justice hereinbefore. (See page 926.)

8. **Protection of Aborigines.**—For the protection of the aboriginal Australian race there are institutions, under the supervision of Aborigines Boards, where the blacks are housed and encouraged to work, the children receiving elementary education. The work is usually carried on at mission stations, but many of the natives are nomadic in habit of life, and receive food and clothing when they call, whilst others but rarely come under the notice of the boards. The native race is extinct in Tasmania. The average annual expenditure on maintenance, etc., for the last four years was—New South Wales, £14,340; Victoria, £4262; Queensland, £10,160; South Australia, £17,037; Western Australia, £17,400; Commonwealth, £63,199.

9. **Other Charitable Institutions.**—Owing to variety of name and function of other charitable institutions it has been found impracticable to give detailed results. The aid given in kind—food, clothing, tools of trade, etc.—is considerable, whilst the shelter and treatment afforded ranges from a bed for a night for casual callers in establishments ministering minor charity, to indoor treatment over long periods for those that exist for the relief of the aged and infirm. The institutions not so particularised include asylums for the deaf, dumb, and blind, maternity institutions and infant homes, homes for the destitute and aged poor, industrial colonies, night shelters, crèches, homes of hope, rescue homes, free kindergarten and ragged schools, auxiliary medical charities, free dispensaries, benevolent societies and nursing systems, charity organisation, ambulance and health societies, boys' brigades, humane and animals' protection societies, prisoners' aid associations, shipwreck relief societies, bush fires and mining accident relief funds.

10. **State Expenditure on Charities.**—The table below gives the amount expended by Government on charities. In some of the States amounts have been included for minor items, which in other States are charged to other heads. The figures are for financial years in New South Wales, Victoria, and Queensland up to 1907, for calendar years in South Australia and Western Australia, and in Tasmania for the calendar year 1904, and financial years 1905-6 and 1906-7. The last three columns give the amounts in the calendar years 1907, 1908, and 1909.

STATE EXPENDITURE ON CHARITIES, 1904 to 1909.

State.	Year.	Amount.	Year.	Amount.	Year.	Amount.	Amount in 1907.	Amount in 1908.	Amount in 1909.
		£		£		£	£	£	£
N.S.W. ...	1904-5	494,818	1905-6	528,281	1906-7	493,605	440,360	481,887	519,327
Victoria ...	,,	294,483	,,	292,454	,,	304,151	361,498	383,086	378,165
Queensland ...	,,	174,379	,,	169,336	,,	193,721	206,881	216,144	200,141
South Aust. ...	1904	98,635	1905	99,194	1906	101,023	113,345	88,752	88,618
West. Australia	,,	103,891	,,	108,122	,,	112,376	146,685	175,839	149,892
Tasmania ...	,,	46,843	1905-6	44,671	1906-7	48,911	46,100	47,537	36,316

The average annual State expenditure for the first three years given was—New South Wales, £505,568; Victoria, £297,030; Queensland, £179,135; South Australia, £99,617; Western Australia, £108,130; Tasmania, £46,808; Commonwealth, £1,236,288. The total in 1907 was £1,314,869; in 1908, £1,393,245; and in 1909 £1,372,459.

11. **Total Charitable Expenditure.**—The expenditure in the Commonwealth in money on hospitals, charities, and all forms of relief publicly given, comprising the amounts furnished by Government and those raised by public subscription, etc., but excluding old-age pensions, is estimated at £1,700,000 for the year 1909.

SECTION XXV.

GENERAL GOVERNMENT.

§ 1. Scheme of Parliamentary Government.

1. **General.**—The legislative power of the Commonwealth is vested in the Federal Parliament, which consists of the Sovereign, the Senate, and the House of Representatives. The Sovereign is represented throughout the Commonwealth by the Governor-General, who, subject to the Constitution of the Commonwealth, has such powers and functions as the Sovereign is pleased to assign to him. In each State there is a State Governor, who is the representative of the Sovereign for the State, and who exercises such powers within the State as are conferred upon him by the Letters Patent which constitute his office, and by the instructions, which inform him in detail of the manner in which his duties are to be fulfilled. The Legislature in each State is also bi-cameral, and consists of (*a*) a Legislative Council and (*b*) a Legislative Assembly, or House of Assembly, the legislative powers of these chambers being delimited by the Commonwealth and the State Constitutions. The latter chamber, which is the larger, is always elective; the qualification for the franchise varies in character. The former chamber is, in the case of New South Wales and Queensland, nominated by the Governor-in-Council, but in the other States it is also elective, the constituencies being differently arranged and some property qualification for the electorate being required. In the Federal Parliament, however, the qualifications for the franchise are identical for both Houses. A brief account of the constitutional history of each of the States has been given in Section II., § 5, hereof. (See pp. 27 to 32.)

2. **Number of Members of the Legislatures.**—The following table shews the number of members in each of the legislative chambers in the Commonwealth and in each State in March, 1911:—

MEMBERS OF PARLIAMENTS OF AUSTRALIA, 1911.

Members in—	C'wealth.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Total.
Upper House	36	53	34	44	18	30	18	233
Lower House	75	90	65	72	42	50	30	424
Total ...	111	143	99	116	60	80	48	657

The use of the expressions "Upper House" and "Lower House" in the above statement, though not justified constitutionally, is convenient, inasmuch as the legislative chambers are known by different names in the Commonwealth and in some of the States.

In the Commonwealth Parliament the Upper House is known as the Senate, and in the State Parliaments as the Legislative Council. The Lower House is known as

follows:—In the Commonwealth Parliament as the House of Representatives, in the State Parliaments of New South Wales, Victoria, Queensland, and Western Australia as the Legislative Assembly, and in the State Parliaments of South Australia and Tasmania as the House of Assembly.

3. **The Cabinet and Executive Government.**—A précis of the sections of the Commonwealth Constitution Act dealing with the Executive Government is given on page 41 hereinbefore. In both the Commonwealth and the State Legislatures the forms of Government have been founded on their prototype, the Imperial Government, and the relations established between the Ministry and the representatives of the people are in accordance with those prevailing in Great Britain. The executive powers in the Commonwealth and in the State Governments are vested in the Governor-in-Council. The Executive Council in the Commonwealth and in the majority of the States is co-extensive with a group of departmental chiefs who are usually spoken of as the Cabinet, and who change with the rise and fall of party majorities. In Victoria and Tasmania, however, the Cabinet on leaving office remain members of the Executive Council, though they no longer attend its meetings, and it is in fact an essential feature of the Cabinet system of Government that they should not do so, except to assist the Governor in transacting purely formal business, or to advise on non-political questions.

(i.) *The Executive Council.* This body is composed of the Governor and Ministers appointed by the Governor as shewn hereinafter. They are sworn both as Executive Councillors and as Ministers controlling the administrative departments. The meetings are official in character; they are presided over by the Governor-General (or Governor) and are attended by the clerk, who keeps a formal record of its proceedings. At these meetings the decisions of the Cabinet are put into official form and made effective, appointments are confirmed, resignations accepted, proceedings ordered, and notices and regulations published.

In March, 1911, the Executive Council was composed of the following members:—

THE EXECUTIVE COUNCIL OF THE COMMONWEALTH, 1911.

Prime Minister and Treasurer ...	The Hon. ANDREW FISHER.
Attorney-General	The Hon. W. M. HUGHES.
Minister of State for External Affairs ...	The Hon. E. L. BATCHELOR.
Minister of State for Home Affairs ...	The Hon. K. O'MALLEY.
Postmaster-General	The Hon. J. THOMAS.
Minister of State for Defence	The Hon. G. F. PEARCE.
Minister of State for Trade and Customs	The Hon. F. G. TUDOR.
Vice-President of Executive Council ...	The Hon. G. MCGREGOR.
Honorary Minister	The Hon. E. FINDLEY.
„ „	The Hon. C. E. FRAZER.

Particulars of previous Commonwealth Ministries are given on pages 46-8 hereinbefore, and on page 955 following.

(ii.) *The Cabinet.* The meetings of this body are private and deliberative. No one is admitted but the actual Ministry of the day, no records of the meetings transpire, and no official notice is taken of the proceedings. The members of the Cabinet, being the leaders of the party in power in Parliament, control the bent of legislation and must retain the confidence of the people and also of the Governor-General (or Governor), to whom they act as an advising body. They also in effect wield, by virtue of their seats on the Executive Council, the whole executive force of the community. In summoning, proroguing, or dissolving Parliament the Governor-General (or Governor) is usually guided by the advice tendered him by the Cabinet, though legally he is in no way bound to do so. The following statement gives the names of the Ministries of State for the Commonwealth, who have held office since the inauguration of the Commonwealth Government:—

MINISTERS OF STATE FOR THE COMMONWEALTH OF AUSTRALIA FROM 1st JANUARY, 1901, to MARCH, 1911.

EXTERNAL AFFAIRS.

Name.	From	To
§Rt. Hon. E. BARTON, P.C., K.C.*	1/1/01	23/9/03
Hon. A. DEAKIN*	24/9/03	26/4/04
Hon. W. M. HUGHES	27/4/04	17/8/04
Rt. Hon. G. H. REID, P.C., K.C.**	18/8/04	4/7/05
Hon. A. DEAKIN*	5/7/05	12/11/08
Hon. E. L. BATCHELOR ...	13/11/08	2/6/09
Hon. L. E. GROOM ...	3/6/09	28/4/10
Hon. E. L. BATCHELOR ...	29/4/10	‖

TRADE AND CUSTOMS.

Name.	From	To
Rt. Hon. C. C. KINGSTON, P.C., K.C.	1/1/01	24/7/03
Hon. Sir W. J. LYNE, K.C.M.G.	7/8/03	26/4/04
Hon. A. FISHER	27/4/04	17/8/04
Hon. A. McLEAN	18/8/04	4/7/05
Hon. Sir W. J. LYNE, K.C.M.G.	5/7/05	29/7/07
Hon. A. CHAPMAN	30/7/07	12/11/08
Hon. F. G. TUDOR	13/11/08	2/6/09
Hon. Sir R. W. BEST, K.C.M.G....	3/6/09	28/4/10
Hon. F. G. TUDOR	29/4/10	‖

ATTORNEY-GENERAL.

Name.	From	To
Hon. A. DEAKIN	1/1/01	23/9/03
Hon. J. G. DRAKE	24/9/03	26/4/04
Hon. H. B. HIGGINS, K.C. ...	27/4/04	17/8/04
Hon. Sir J. H. SYMON, K.C.M.G., K.C.	18/8/04	4/7/05
Hon. I. A. ISAACS	5/7/05	11/10/06
Hon. L. E. GROOM	12/10/06	12/11/08
Hon. W. M. HUGHES	13/11/08	2/6/09
Hon. P. M. GLYNN ...	3/6/09	28/4/10
Hon. W. M. HUGHES	29/4/10	‖

TREASURER.

Name.	From	To
Rt. Hon. Sir G. TURNER, P.C., K.C.M.G.	1/1/01	26/4/04
Hon. J. C. WATSON*	27/4/04	17/8/04
Rt. Hon. Sir G. TURNER, P.C., K.C.M.G.	18/8/04	4/7/05
Rt. Hon. Sir J. FORREST, P.C., G.C.M.G.	5/7/05	29/7/07
Hon. Sir W. J. LYNE, K.C.M.G.	30/7/07	12/11/08
Hon. A. FISHER*	13/11/08	2/6/09
Rt. Hon. Sir J. FORREST, P.C., G.C.M.G.	3/6/09	28/4/10
Hon. A. FISHER*	29/4/10	‖

HOME AFFAIRS.

Name.	From	To
Hon. Sir W. J. LYNE, K.C.M.G....	1/1/01	7/8/03
Rt. Hon. Sir J. FORREST, P.C., G.C.M.G.	7/8/03	26/4/04
Hon. E. L. BATCHELOR	27/4/04	17/8/04
Hon. D. THOMPSON	18/8/04	4/7/05
Hon. L. E. GROOM	5/7/05	11/10/06
†Hon. T. T. EWING	12/10/06	23/1/07
Hon. J. H. KEATING	24/1/07	12/11/08
Hon. H. MAHON	13/11/08	2/6/09
Hon. G. W. FULLER	3/6/09	28/4/10
Hon. K. O'MALLEY	29/4/10	‖

DEFENCE.

Name.	From	To
Hon. Sir J. R. DICKSON, K.C.M.G.	1/1/01	¶
Rt. Hon. Sir J. FORREST, P.C., G.C.M.G.	17/1/01	7/8/03
Hon. J. G. DRAKE	7/8/03	23/9/03
Hon. A. CHAPMAN	24/9/03	26/4/04
Hon. A. DAWSON	27/4/04	17/8/04
Hon. J. W. McCAY	18/8/04	4/7/05
Hon. T. PLAYFORD	5/7/05	23/1/07
Hon. Sir T. T. EWING, K.C.M.G.	24/1/07	12/11/08
Hon. G. F. PEARCE	13/11/08	2/6/09
Hon. J. COOK	3/6/09	28/4/10
Hon. G. F. PEARCE	29/4/10	‖

POSTMASTER-GENERAL.

Name.	From	To
Rt. Hon. Sir JOHN FORREST, P.C., G.C.M.G.	1/1/01	17/1/01
Hon. J. G. DRAKE	5/2/01	7/8/03
Hon. Sir P. O. FYSH, K.C.M.G. ...	7/8/03	26/4/04
Hon. H. MAHON	27/4/04	17/8/04
Hon. S. SMITH	18/8/04	4/7/05
Hon. A. CHAPMAN	5/7/05	29/7/07
Hon. S. MAUGER	30/7/07	12/11/08
Hon. J. THOMAS...	13/11/08	2/6/09
Hon. Sir J. QUICK	3/6/09	28/4/10
Hon. J. THOMAS	29/4/10	‖

VICE-PRESIDENT OF THE EX. COUNCIL.

Name.	From	To
Hon. R. E. O'CONNOR, K.C. ...	1/1/01	23/9/03
Hon. T. PLAYFORD	24/9/03	26/4/04
Hon. G. McGREGOR	27/4/04	17/8/04
Hon. J. G. DRAKE	18/8/04	4/7/05
†Hon. T. T EWING	5/7/05	11/10/06
Hon. J. H. KEATING	12/10/06	19/2/07
Hon. Sir R. W. BEST, K.C.M.G.	20/2/07	12/11/08
Hon. G. McGREGOR	13/11/08	2/6/09
Hon. E. D. MILLEN	3/6/09	28/4/10
Hon. G. McGREGOR	29/4/10	‖

WITHOUT PORTFOLIO.

Name.	From	To
Hon. N. E. LEWIS‡	1/1/01	23/4/01
Hon. Sir P. O. FYSH, K.C.M.G. ...	24/4/01	7/8/03
Hon. J. H. KEATING	5/7/05	11/10/06
Hon. S. MAUGER	12/10/06	29/7/07
Hon. J. H. COOK	28/1/08	12/11/08
Hon. J. HUTCHISON	13/11/08	2/6/09
Hon. A. DEAKIN*	3/6/09	28/4/10
Col. Hon. J. F. G. FOXTON ...	3/6/09	28/4/10
Hon. E. FINDLEY	29/4/10	‖
Hon. C. E. FRAZER	29/4/10	‖

* Prime Minister. § Afterwards the Right Hon. Sir E. Barton, P.C., G.C.M.G., etc. † Afterwards the Hon. Sir T. T. Ewing, K.C.M.G. ‡ Afterwards the Hon. Sir N. E. Lewis, K.C.M.G. ‖ Still in office. ¶ Died 10th January, 1901. ** Prime Minister, afterwards the Right Hon. Sir G. H. Reid, P.C., K.C.M.G., etc.

(iii.) *Constitution of Ministries.* The subjoined table shews the constitution of the Ministries in the Commonwealth and the State Governments in March, 1911:—

CONSTITUTION OF MINISTRIES, 1911.

Ministers with Seats in—	C'wealth.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Total.
The Upper House ...	3	1	4	2	2	2	2	16
The Lower House ...	7	9	8	7	4	6	3	44
Total	10	10	12	9	6	8	5	60

The names of the members of the Ministries in each State in March, 1911, are shewn in the following statement:—

MEMBERS OF STATE GOVERNMENT MINISTRIES, 1911.

NEW SOUTH WALES—MINISTRY.

Premier and Colonial Treasurer—
HON. J. S. T. MCGOWEN.

Attorney-General and Minister of Justice—
HON. W. A. HOLMAN.

Colonial Secretary & Minister for Agric.—
HON. D. MACDONELL.

Secretary for Lands—
HON. N. R. W. NIELSON.

Secretary for Public Works
HON. A. GRIFFITH.

Minister of Public Instruction and Minister for Labour and Industry—
HON. G. S. BEEBY.

Secretary for Mines—
HON. A. EDDEN.

Vice-President of the Executive Council—
HON. F. FLOWERS, M.L.C.

Members of Ex. Council (without portfolio)
HON. A. C. CARMICHAEL.
HON. J. L. TREFLE.

VICTORIA—MINISTRY.

Premier, Chief Sec., and Min. of Labour—
HON. J. MURRAY.

Min. of Water Supply and Min. of Agricul.
HON. G. GRAHAM.

Treasurer—
HON. W. A. WATT.

Attorney-General and Solicitor-General—
HON. J. D. BROWN, M.L.C.

Minister of Public Health and Commissioner of Public Works—
HON. W. L. BAILLIEU, M.L.C.

Commissioner of Crown Lands and Survey, and Pres. of Board of Land and Works—
HON. H. MACKENZIE.

Min. of Pub. Instruction and Min. of Rlys.—
HON. A. A. BILLSON.

Minister of Mines and Forests—
HON. P. MCBRIDE.

Ministers without Office—
HON. J. CAMERON.
HON. J. THOMSON.
HON. W. H. EDGAR, M.L.C.
HON. F. HAGELTHORN, M.L.C.

QUEENSLAND—MINISTRY.

Premier, Vice-Pres. of Ex. Council, and Chief Sec.—
HON. D. F. DENHAM.

Home Secretary and Secretary for Mines—
HON. J. G. APPEL.

Secretary for Public Lands—
HON. E. H. MACARTNEY.

Treasurer and Secretary for Public Works—
HON. W. H. BARNES.

Secretary for Railways—
HON. W. T. PAGET.

Secretary for Public Instruction—
HON. K. M. GRANT.

Attorney-General—
HON. T. O'SULLIVAN, M.L.C.

Secretary for Agriculture and Stock—
HON. J. TOLMIE.

Minister without Portfolio—
HON. A. H. BARLOW, M.L.C.

SOUTH AUSTRALIA—MINISTRY.

Premier and Minister of Public Works—
HON. J. VERRAN.

Chief Secretary—
HON. F. S. WALLIS, M.L.C.

Minister of Education—
HON. F. W. CONEYBEER.

Treasurer and Commissioner of Crown Lands and Immigration—
HON. C. VAUGHAN.

Attorney-General and Minister Controlling Northern Territory—
HON. W. J. DENNY.

Minister of Industry and Agriculture—
HON. J. P. WILSON, M.L.C.

WESTERN AUSTRALIA—MINISTRY.

Premier and Colonial Treasurer—HON. F. WILSON.

Minister for Lands, Agriculture, and Industries—
HON. J. MITCHELL.

Minister for Mines and Railways—
HON. H. GREGORY.

Attorney-General and Min. for Education—
HON. J. L. NANSON.

Minister for Works—
HON. H. DAGLISH.

Colonial Secretary—
HON. J. D. CONNOLLY, M.L.C.

Ministers without Portfolio—
HON. A. MALE.
HON. R. D. M'KENZIE, M.L.C.

TASMANIA—MINISTRY.

Premier and Treasurer—HON. SIR N. E. LEWIS, K.C.M.G.

Chief Secretary—
HON. G. H. BUTLER, M.L.C.

Attorney-General, Minister for Education, and Minister for Mines—
HON. A. E. SOLOMON.

Min. of Lands, Public Works and Railways—
HON. A. HEAN.

Minister without Portfolio—
HON. C. RUSSEN, M.L.C.

4. **The Appointment of Ministers and of Executive Councillors.**[1]—Although it is technically possible for the Governor to make and unmake cabinets at his pleasure, under all ordinary circumstances his apparent liberty in choosing his Executive Council is virtually restricted by the operation of constitutional machinery. When a Ministry is defeated in Parliament or at the polls the procedure both in the Commonwealth and the State Parliaments generally, though not invariably, follows that prevailing in the

1. See Jenks' "Government of Victoria," pp. 269 *et seq.*

Imperial Parliament. The members of the Ministry tender their resignations to the Governor-General or Governor, whose duty it is to announce his intention of accepting them. The resignations are not actually accepted at once, for in that case the offices would become vacant and business would be at a standstill. The outgoing Premier usually suggests to the Governor the name of the most prominent member of the Opposition, and the Governor thereupon "sends for" the person suggested; and if the latter accepts the responsibility, he endeavours to form a Ministry; if he fails, he informs the Governor, who applies to some other person. The distribution of portfolios is first arranged by the proposed Ministers themselves and is then submitted to the Governor for approval, which is given as a matter of course unless the list contains the name of any person against whom serious objections exist. Before appointing the persons named to the various offices the Governor accepts the resignations of the outgoing Ministers, and also appoints to seats in the Executive Council such members of the new Ministry as do not already hold them. Their seats in Parliament being ordinarily vacated by acceptance of office the new Ministers must go before their constituencies, and the result of these by-elections usually decides the attitude of the Opposition. In the Commonwealth Parliament, however, seats are not vacated by the acceptance of office. It may be seen from what has been stated above that only certain persons can in practice be chosen as members of a Ministry. The Cabinet must be chosen so that the following conditions are fulfilled:—(*a*) The members must belong to one or other of the Legislative Chambers and also to the same political party; (*b*) that party must possess a majority in the House of Representatives or in the Legislative Assembly or House of Assembly as the case may be; (*c*) the Ministers must carry out a concerted policy; (*d*) they must acknowledge the leadership of one chief Minister; and (*e*) must be under a joint responsibility, signified by resignation *en bloc* in the event of Parliamentary censure.

5. **The Resignation of Ministers.**—A Ministry is bound to resign either when it fails to command a majority in the House of Representatives, the Legislative Assembly, or the House of Assembly, as the case may be, or when a want of confidence has been clearly shewn, either (*a*) by a vote of censure, (*b*) by a declaration of want of confidence, or (*c*) by a vote disapproving of some act of the Government. In such cases the Ministry must either resign or must appeal to the country.

6. **Enactments of the Parliament.**—In the Commonwealth, all laws are enacted in the name of the Sovereign, the Senate, and the House of Representatives. The subjects with respect to which the Commonwealth Parliament is empowered to make laws are enumerated in the Constitution Act (see pp. 39-40 hereinbefore). In the States, laws are enacted in the name of the Sovereign by and with the consent of the Legislative Council and Legislative Assembly or House of Assembly. The Governor-General or the State Governor acts as Viceroy as regards giving the Royal Assent to or vetoing Bills passed by the Legislatures, or reserving them for the special consideration of the Sovereign. In the States, the Councils and Assemblies are empowered generally, subject to the Commonwealth Constitution, to make laws in and for their respective States in all cases whatsoever. Subject to certain limitations, they may alter, repeal, or vary their Constitution. Where a law of a State is inconsistent with a law of the Commonwealth the latter prevails, and the former is, to the extent of the inconsistency, invalid.

7. **Powers and Functions of the Governor-General and of the Governors.**—The Governor-General and the State Governors act under the authority of the commissions by which they are appointed and of Letters Patent under the Great Seal of the United Kingdom, and according to instructions issued by the Colonial Office and passed under the Royal Sign Manual and Signet.

(i.) *The Governor-General.* The office of Governor-General and Commander-in-Chief of the Commonwealth was constituted by Letters Patent issued on the 29th October, 1900, in pursuance of the provisions of the Commonwealth Constitution Act. The powers and duties of the Governor-General were further defined by Royal instructions passed on

the same date. The principal and most important of his functions, legislative as well as executive, are expressly conferred upon him by the terms of the Constitution itself. He is the custodian of the Great Seal of the Commonwealth, and has the appointment of political officers to administer Departments of State of the Commonwealth.

(*a*) His legislative functions are exercised with respect to proposed laws as finally passed by the Federal Houses of Parliament. Such Bills are presented to the Governor-General for his assent in the King's name, on receiving which they become law throughout the Commonwealth. The Governor-General may, however, withhold his assent, or may reserve any Bill for the King's pleasure. He may return to the House in which it originated any proposed law with suggested amendments. The King may disallow any law within one year from the date on which it was assented to by the Governor-General.

(*b*) The Governor-General's executive functions are, under ordinary circumstances, exercised on the advice of his responsible Ministers. Various specific powers are vested in him by the Constitution; he may summon or prorogue Parliament and may dissolve the House of Representatives. He is the Commander-in-Chief of the military and naval forces of the Commonwealth, and is invested by the Crown with the prerogative of mercy in case of offences committed against the laws of the Commonwealth.

(*c*) The Governor-General is also invested with authority in certain matters of Imperial interest, such as the control of the naval and military forces of the Commonwealth; the observance of the relations of foreign States to Great Britain, so far as they may be affected by the indirect relations of such States to the Commonwealth; and the treatment of neutral and belligerent ships in Commonwealth waters in time of war.

The Governor-General may not leave the Commonwealth without having first obtained leave from the Imperial Government, to whom he is alone responsible for his official acts. The present Governor-General is the Right Honourable William Humble, Earl of Dudley, P.C., G.C.M.G., G.C.V.O., etc. He assumed office on the 9th September, 1908. (Particulars of previous Governors-General are given on p. 46 hereinbefore.)

(ii.) *The State Governors.* The powers and functions of the State Governors are, within their respective States, very similar to those exercised by the Governor-General for the Commonwealth, and are defined by the terms of their Commissions and by the Royal instructions accompanying the same. A State Governor is the official head of the State Legislature, and assents in the name of the Crown to all Bills passed by the Parliament, reserving for the Royal Assent certain classes of Bills, which are regulated by the Constitution Acts and by the instructions issued by the Imperial Government. The Governors are, under ordinary circumstances, guided by their Executive Councils, the chief matters in which the exercise of discretion is required being the granting or withholding of a dissolution of Parliament when requested by a Premier; the appointment of a new Ministry; or the assenting to, vetoing, or receiving of Bills passed by the legislative chambers. The Governors are authorised, under certain restrictions, to administer the prerogative of mercy by the reprieve or pardon of criminal offenders within their jurisdiction, and to remit fines and penalties due to the Crown. All moneys to be expended for the public service are issued from the Treasury under the Governor's warrant.

The following is a list of the Governors of the various States of the Commonwealth in March, 1911:—

New South Wales	... BARON CHELMSFORD, G.C.B., K.C.M.G.
Victoria	... SIR THOMAS DAVID GIBSON-CARMICHAEL, Bart., LL.D., K.C.M.G.
Queensland	... SIR WILLIAM MACGREGOR, G.C.M.G., C.B.
South Australia	... SIR DAY HORT BOSANQUET, K.C.B., G.C.V.O.
Western Australia	... SIR GERALD STRICKLAND, K.C.M.G.
Tasmania	... Major-General SIR HARRY BARRON, K.C.M.G., R.V.O.

8. **Cost of Parliamentary Government.**—The following statement shews the cost of parliamentary government in the Commonwealth and in each State, as well as in the whole of Australia, for the year ended the 30th June, 1910 :—

COST OF PARLIAMENTARY GOVERNMENT, 1909-10.

Particulars.	C'lth.	N.S.W.	Vict.	Q'ld.	S.A.	W.A.	Tas.	Total.
	£	£	£	£	£	£	£	£
1. *Governor-General or Governor*—								
Governor's salary	10,000	5,000	5,000	2,766	4,000	4,000	2,569	33,335
Private secretary's salary		376	...	300	...	350	...	1,026
Governor's establishments	...	324	4,870	743	...	923	216	28,677
Repairs and maintenance of Governor's residences	7,754	972		4,052	554	1,752	985	
Miscellaneous	4,154	...		1,029	239	...	154	
Total	21,908	6,672	9,870	8,896	4,793	7,025	3,874	63,038
2. *Executive Council*—								
Salaries of officers	721	520	323	170	...	350	...	2,084
Other expenses	60	..	..	76	...	51	...	187
Total	781	520	323	246	...	401	...	2,271
3. *Ministry*—								
Salary of Ministers	12,000	11,040	8,400	7,609	5,000	6,200	3,200	53,449
Other expenses	..	856	..	...	...	889	301	2,046
Total	12,000	11,896	8,400	7,609	5,000	7,089	3,501	55,495
4. *Parliament*—								
A. *The Upper House:*								
Allowances to members	21,388		...	...	3,087	5,422	1,471	31,348
Railway passes	8,838*	6,675	1,020	...	450	161	750	17,949
Other expenses of members	365	125	...	..	118	...	3	611
B. *The Lower House:*								
Allowances to members	37,112	24,122	17,064	18,168	6,571	8,517	2,443	113,997
Railway passes	†	10,039	1,930	...	1,030	236	1,250	14,585
Other expenses of members	926	1,622	...	1,424	343	44	30	4,389
C. *Miscellaneous*								
Salaries of officers and staff	14,008	25,928	13,248	6,810	4,933	4,871	2,573	72,161
Printing	2,340	7,001	2,341	3,811	5,241	299	1,438	23,471
Hansard	12,999	4,683	7,233	2,692	2,375	3,142	...	33,124
Library	4,198	666	1,336	388	564	330	106	7,668
Refreshment rooms	1,005	400	1,188	822	979	1,138	86	5,708
Water, power, light and heat	1,388	673	811	421	750		134	
Postage and stationery	6,750	725	1,019	286	170	1,552	102	22,112
Miscellaneous		6,606‡			610		167	
Total	118,482	89,323	47,270	34,522	27,241	25,732	10,553	353,123
5. *Electoral Office*—								
Salaries of officers and staff	4,933	773	827	1,132	2,723	1,689	910	98,126
Other expenses	34,861	15,366	22,107	2,154	6,468	4,173		
Total	39,794	16,139	22,934	3,286	9,191	5,872	910	98,126
6. *Cost of Elections*	49,938	818	3,406	8,348	3,600	1,107	950	68,187
7. *Royal Commissions and Select Committees*—								
Fees of members	126	..	1,200	...	440	16	65	4,408
Other expenses of members	637	..	763	...	705	456		
Miscellaneous	1,314	1,477	702	...	269	681	3,051	7,494
Total	2,077	1,477	2,665	...	1,414	1,153	3,116	11,902
GRAND TOTAL	245,000	126,845	94,868	62,907	51,239	48,379	22,904	652,142

* Including Lower House. † Included in Upper House. ‡ Including £5926 for fees and expenses of Parliamentary Standing Committee on Public Works.

The figures for New South Wales for the year 1908-9, which were not available when the previous issue of this publication went to press, are as follows, the totals only being given :—*Governor*, £8676 ; *Executive Council*, £500 ; *Ministry*, £12,051 ; *Parliament*, £88,531 ; *Electoral Office*, £4644 ; *Cost of Elections*, nil ; *Royal Commissions* and *Select Committees*, £8856. Grand total, £123,258.

9. **Cost of Parliamentary Government per 1000 of Population.**—In the subjoined table particulars are given for some of the most important items of the cost of parliamentary government per 1000 of population for the year ended 30th June, 1910 :—

COST* OF PARLIAMENTARY GOVERNMENT PER 1000 OF POPULATION, 1909-10.

Particulars.	C'lth.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	Total.
	£	£	£	£	£	£	£	£
1. *Governor-General or Governor*—								
Governor's salary	2.29	3.07	3.86	4.83	9.61	14.62	13.75	7.62
All other expenses	2.72	1.03	3.75	10.70	1.91	11.06	6.98	6.79
Total	5.01	4.10	7.61	15.53	11.52	25.68	20.73	14.41
2. *Executive Council*	0.18	0.32	0.25	0.43	...	1.47	...	0.52
3. *Ministry*	2.74	7.31	6.48	13.29	12.01	25.91	18.74	12.69
4. *Parliament*—								
A. *The Upper House:*								
Allowances and other expenses of members ...	4.97	0.08	...	...	7.70	19.82	7.89	7.31
Railway passes	2.03†	4.10	0.79	...	1.08	0.59	4.01	4.10
B. *The Lower House:*								
Allowances and other expenses of members ...	8.70	15.81	13.15	34.21	16.62	31.30	13.23	27.06
Railway passes	‡	6.20	1.50	...	2.52	0.86	6.69	3.34
C. *Miscellaneous:*								
Salaries of officers and staff	3.32	15.93	10.21	11.37	11.86	17.81	13.77	16.50
Printing and *Hansard* ...	5.11	7.18	7.38	11.35	18.31	12.58	7.70	14.31
Library	0.96	0.41	1.08	0.68	1.35	1.28	0.57	1.75
All other expenditure ...	2.10	5.16	2.33	2.67	6.03	9.83	2.62	6.36
Total Parliament ...	27.09	54.87	36.44	60.28	65.47	94.07	56.48	80.73
5. *Electoral Office*	9.10	9.91	17.68	5.74	22.09	21.47	4.87	22.43
6. *Cost of Elections*	11.42	0.50	2.63	14.58	8.65	4.05	5.08	15.59
7. *Royal Commissions and Select Committees*	0.47	0.91	2.05	...	3.40	4.21	16.67	2.72
GRAND TOTAL	56.01	77.92	73.14	109.85	123.14	176.86	122.57	149.09

* Cost expressed in pounds sterling and decimals of a pound, per 1000 of population. †Including Lower House. ‡ Included in Upper House.

§ 2. Parliaments and Elections.

1. **Qualifications for Membership and for Franchise.**—The summary on pages 962-3 gives particulars as to the legislative chambers in the Commonwealth and State Parliaments, and shews concisely the qualifications necessary for membership and for the franchise in each House. Persons who are otherwise eligible, either as members or voters, are generally disqualified on the usual grounds of being of unsound mind or attainted of treason, being convicted of certain offences, and, as regards membership, on the grounds of holding a place of profit under the Crown, being pecuniarily interested in Government contracts, or being an undischarged bankrupt.

PARLIAMENTS AND ELECTORATES.

Particulars.	Commonwealth.	New South Wales.	Victoria.
1. Senate and Legislative Councils.			
Number of Members ...	36	53. May not be less than 21	34
Qualification for Membership	Adult British subjects natural-born or naturalised for 5 years, if (*a*) eligible to vote at the elections for the Senate, and (*b*) resident for at least 3 years within the Commonwealth	Male adult natural-born or naturalised British subjects	Male natural-born or naturalised British subjects of the age of 30 years or upwards, (*a*) if possessed of a freehold property of the annual value of at least £50 for one year previous to the election, and (*b*) in the case of naturalised subjects if a resident of the State for 10 years
Period for which elected or nominated	6 years	For life	6 years
Allowance to Members ...	£600 each per annum	None	None
Qualification for Franchise	Adult British subjects of either sex who have lived in Australia for 6 months continuously. Aboriginal natives of Australia, Asia, Africa, or the islands of the Pacific, except New Zealand, cannot vote at federal elections unless they have acquired a right to vote at elections for the Lower House of a State Parliament	(Nominated)	Adult British subjects of either sex, if either (*a*) the owner of a freehold of the annual value of £10 or of a leasehold of property rated at £15, or (*b*) a graduate of a British university, matriculated students of Melbourne University, qualified legal and medical practitioners, ministers of religion, certificated schoolmasters, and naval and military officers. Naturalised subjects must be of 3 years' standing, and must have resided in the State for 12 months
2. House of Representatives, Legislative Assemblies, etc.			
Number of Members ...	75	90	65
Qualification for Membership	The same as for the Senate	Male adult British subjects if qualified to vote at an election of members of the Legislative Assembly, unless disqualified under the Constitution Acts or the Federal Elections Act 1900	Male adult natural-born British subjects or aliens naturalised for the period of 5 years, if resident in the State for not less than 2 years
Period for which elected ...	Duration of Parliament, which is limited to 3 years	Duration of Parliament, which is limited to 3 years	Duration of Parliament, which is limited to 3 years
Allowance to Members ...	£600 each per annum	£300 each per annum	£300 each per annum
Qualification for Franchise	The same as for the Senate	Adult naturalised subjects of either sex, who have resided in the State continuously for one year after naturalisation, and adult natural-born subjects who have resided in the State for a continuous period of 1 year	Adult natural-born subjects of either sex, or naturalised for 1 year prior to the 1st January or the 1st July in any year, if (*a*) enrolled as ratepayer, or (*b*) if holding an elector's right and enrolled on the general or supplementary roll. (These provisions only remain in force until a day to be notified by proclamation of the Governor-in-Council as the day on which the provisions of the Electoral Act 1910, came into effect)

SUMMARY, MARCH, 1911.

Queensland.	South Australia.	Western Australia.	Tasmania.
44	18	30	18
Male adult natural-born or naturalised British subjects	Male natural-born or naturalised British subjects if (*a*) of the age of 30 years or upwards, and (*b*) if resident in the State for 3 years	Male natural-born or naturalised British subjects of the age of 30 years or upwards, if (*a*) in the case of natural-born subjects, resident in the State for 2 years, and (*b*) in the case of naturalised subjects, if naturalised for 5 years previous to the election and resident in the State during that period	Male natural-born or naturalised British subjects of the age of 30 years or upwards, if qualified to vote at the election for the Legislative Council
For life	6 years	6 years	6 years
None	£200 each per annum	£200 each per annum	£100 each per annum
(Nominated)	Adult British subjects of either sex who are either (*a*) owners of a freehold of the clear value of £50, (*b*) owners of a leasehold of the clear annual value of £20, with at least 3 years to run or containing a right of purchase, (*c*) occupiers of a dwelling-house of the clear annual value of £17, (*d*) registered proprietors of a Crown lease on which there are improvements to the value of at least £50. Voters must have resided in State for 6 months prior to enrolment	Adult British subjects of either sex who have resided in the State for 6 months, and who either (*a*) own a freehold estate to the value of £100, (*b*) occupy a house or own leasehold property rated at £25, (*c*) hold Crown leases or licenses to the value of not less than £10 per annum, or (*d*) are on the electoral list of a municipality or road-board district in respect of property of the annual value of £25. Aboriginal natives may only acquire the franchise in respect of a freehold qualification	Adult British subjects of either sex who have resided in the State for 12 months, if either (*a*) possessing freehold to the annual value of £10 or leasehold to the value of £30, or (*b*) graduates of a British university, qualified legal or medical practitioners, officiating ministers of religion, or retired naval or military officers
72	42	50	30
All persons qualified and registered to vote at the election of members of the Legislative Assembly are eligible as members	Any person qualified for the franchise of the House of Assembly is eligible for membership	Male adult British subjects, if resident in the State for 12 months. Naturalised subjects must have been naturalised for 5 years and have resided in the State for 2 years previous to the election	Adult British subjects of either sex if (*a*) they have resided in the State for 6 months continuously and (*b*) they are enrolled on the electoral lists
Duration of Parliament, which is limited to 3 years	Duration of Parliament, which is limited to 3 years	Duration of Parliament, which is limited to 3 years	Duration of Parliament, which is limited to 3 years
£300 each per annum	£200 each per annum	£200 each per annum	£100 each per annum
Adult British subjects of either sex who either (*a*) have resided in Queensland for 12 months continuously and whose names are on the electoral roll, (*b*) own freehold estate of the value of £100, (*c*) have occupied a house of the annual value of £10 for at least 6 months, or (*d*) have a leasehold estate in possession of the annual value of £20 with not less than 18 months to run.	Adult natural-born or naturalised subjects of either sex who have resided in the State for 6 months continuously. In the Northern Territory only natural-born British subjects and naturalised Europeans or Americans may vote	Adult natural-born or naturalised subjects of either sex who have resided in the State for 6 months continuously and for a continuous period of 1 month in district	Adult natural-born or naturalised subjects of either sex who have resided in Tasmania for 6 months

2. **The Federal Parliament.**—The Senate consists of thirty-six members, six being returned by each of the original federating States. Members of this chamber are elected for a term of six years, but by a provision in the Constitution a certain number retire at the end of every third year, although they are eligible for re-election. In accordance with the Constitution the total number of members of the House of Representatives must be as nearly as possible double that of the Senate. In the House of Representatives the States are represented on a population basis, and the numbers stand at present as follows:—New South Wales, 27; Victoria, 22; Queensland, 9; South Australia, 7; Western Australia, 5; Tasmania, 5—total, 75. The Constitution provides for a minimum of five members in each original State. Members of the House of Representatives are elected for the duration of the Parliament, which is limited to three years. In elections for Senators each State is counted as a single electorate, but an elaborate scheme of subdivision had to be undertaken in order to provide workable electorates in each State for members of the House of Representatives. Members of both Houses are paid at the rate of £600 per annum. Further information regarding the Senate and the House of Representatives is given on page 38 hereinbefore.

(i.) *Particulars of Elections.* There have been three complete Parliaments since the inauguration of Federation. The first Parliament was opened by His Royal Highness, the Duke of Cornwall and York on 9th May, 1901, and was dissolved on 23rd November, 1903. The first session of the fourth Parliament was opened on 1st July, 1910, and was prorogued on 29th November of the same year. Further information as to the Commonwealth Parliaments since their inception is given on page 955 hereinbefore. Since the establishment of the Commonwealth there have been four elections for the Senate and for the House of Representatives. The fourth Federal elections took place on 13th April, 1910, when, in addition to the ordinary voting, electors were called upon to decide the questions on the Financial Agreement and the taking over of the State Debts by the Commonwealth. These matters are referred to in detail on pages 798 and 799 hereinbefore. Particulars regarding the number of electors enrolled and the number of electors to whom ballot-papers were issued at the last three elections may be found in the tables given hereunder :—

FEDERAL ELECTIONS OF 16th DECEMBER, 1903, 12th DECEMBER, 1906, AND 13th APRIL, 1910.

State.		Electors Enrolled.*			Electors to whom Ballot Papers were Issued			Percentage of Voters to Electors Enrolled.		
		Males.	Fem.	Total.	Males.	Fem.	Total.	Males.	Fem.	Total.
THE SENATE.										
New South Wales	1903	360,285	326,764	687,049	189,877	134,487	324,364	52.70	41.16	47.21
	1906	392,077	345,522	737,599	229,654	151,682	381,336	58.57	43.90	51.70
	1910	444,269	390,393	834,662	301,167	211,635	512,802	67.79	54.21	61.44
Victoria	1903	302,069	310.403	612.472	171,839	141,648	313,487	56.89	45.63	51.18
	1906	335,886	336,168	672,054	209,252	171,933	381,185	62.30	51.14	56.72
	1910	346,050	357,649	703,699	245,666	222,869	468,535	70.99	62.32	66.58
Queensland ...	1903	127,914	99,166	227,080	79,938	44,569	124,507	62.49	44.94	54.83
	1906	150,037	121,072	271,109	79,567	44,972	124,539	53.03	37.14	45.94
	1910	158,436	120,595	279,031	104,570	66,064	170,634	66.00	54 78	61.15
South Australia ...	1903	85,947	81,828	167,775	35,736	19,049	54,785	41.58	23.28	32.65
	1906	97,454	95,664	193,118	43,318	27,199	70,517	44.45	28.43	36.51
	1910	105,301	102,354	207,655	63,384	47,119	110,503	60.19	46.03	53.22
Western Australia	1903	74,754	42,188	116,942	26,878	6,270	33,148	35.96	14.86	28.35
	1906	91,427	54,04	145,473	37,180	15,532	52,712	40.67	28.74	36.23
	1910	80,996	53,	134,979	53,704	30,189	83,893	66.30	55.92	62.15
Tasmania ...	1903	43,515	38,753	82,268	23,729	13,292	37,021	54.53	34.30	45.00
	1906	47,306	42,903	90,209	29,164	19,715	48,879	61.65	45.95	54.18
	1910	51,731	46,725	98,456	33,539	24,070	57,609	64.83	51.51	58.51
Commonwealth	1903	994,484	899,102	1,893,586	527,997	359,315	887,312	53.09	39.96	46.86
	1906	1,114,187	995,375	2.109.562	628,135	431,033	1,059,168	56.38	43.30	50.21
	1910	1,186,783	1071,699	2,258,482	802,030	601,946	1,403,976	67.58	56.17	62.16

FEDERAL ELECTIONS OF 16th DECEMBER, 1903, 12th DECEMBER, 1906, AND 13th APRIL, 1910—(Continued).

State.		Electors Enrolled.*			Electors to whom Ballot Papers were Issued.			Percentage of Voters to Electors Enrolled.		
		Males.	Fem.	Total.	Males.	Fem.	Total.	Males.	Fem.	Total.
THE HOUSE OF REPRESENTATIVES.*										
New South Wales	1903	303,254	274,763	578,017	164,133	118,381	282,514	54.12	43.08	48.88
	1906	363,723	314,777	678,500	216,150	141,227	357,377	59.43	44.87	52.67
	1910	431,702	379,927	811,629	294,049	207,868	501,917	68.11	54.71	61.84
Victoria	1903	241,134	247,089	488,223	142,460	120,329	262,789	59.08	48.70	53.83
	1906	335,886	336,168	672.054	209,266	171,999	381,265	62.30	51.16	56.73
	1910	346,050	357,649	703,699	245,663	222,869	468,532	70.99	62.32	66.58
Queensland ...	1903	114,550	88,375	202,925	74,042	41,689	115,731	64.64	47.17	57.03
	1906	150,037	121,072	271,109	79,540	44,942	124,482	53.01	37.12	45.92
	1910	158,436	120,595	279,031	104,570	66,064	170,634	66.00	54.78	61.15
South Australia ...	1903	23,856	25,789	49,645	12,394	7,728	20,122	51.95	29.97	40.53
	1906	42,065	38,578	80,643	19,850	12,669	32,519	47.19	32.84	40.32
	1910	59,581	61,594	121,175	37,189	29,852	67,041	62.42	48.47	55.33
Western Australia	1903	41,500	28,324	69,824	16,824	4,409	21,233	40.54	15.57	30.41
	1906	91,427	54,046	145,473	36,976	15,740	52,716	40.44	29.12	36.24
	1910	80,996	53,983	134,979	53,704	30,189	83,893	66.30	55.92	62.15
Tasmania ...	1903	43,515	38,753	82,268	23,729	13,284	37,013	54 53	34.28	44.99
	1906	37,779	34,839	72,618	23,753	16,441	40,194	62.87	47.19	55.35
	1910	51,731	46,725	98,456	33,539	24.070	57,609	64.83	51.51	58.51
Commonwealth	1903	767,809	703,093	1,470,902	433,582	305,820	739,402	56.47	43.50	50.27
	1906	1,020,917	899,480	1,920,397	585,535	403,018	988,553	57.35	44.81	51.48
	1910	1,128,496	1 020,473	2,148,969	768,714	580,912	1,349,626	68.12	56.93	62.80

* For the House of Representatives the number of electors enrolled in contested divisions only is given.

In the Senate the figures for the year 1906 shew that ballot-papers were issued to 50.21 per cent. of the electors, and are a slight improvement on those for the year 1903, when only about 47 per cent. of the electors visited the polls. There was, however, a substantial increase in the number of electors who voted at the 1910 elections, 62.16 per cent. of the persons on the rolls exercising the franchise. The increase of 11.95 per cent. over the 1906 elections was in a great measure due to the extraordinary amount of party feeling that existed at the 1910 elections. Allowing for the various causes which may have prevented those qualified from recording their votes, it cannot be said that the electors of the Commonwealth have, so far, set a high value on the privilege of the franchise. In the elections for the House of Representatives the figures for the three years shew a slight improvement in percentage of voters as compared with the returns for the Senate; nevertheless they cannot be looked upon as satisfactory. In every instance the percentage of female voters is very far below that of the males.

3. **The Parliament of New South Wales.**—The Legislative Council is in this State a nominee chamber, the Legislative Assembly being an elective body. Theoretically the Legislative Council may contain an unlimited number of members, but in practice the number is restricted to about sixty, the members at the latest available date being fifty-three. Members are appointed by the Governor, acting on the advice of the Executive Council. The tenure of the seat is for life; four-fifths of the members must be persons

not holding any paid office under the Crown, but this is not held to include officers of His Majesty's sea or land forces on full or half pay, or retired officers on pensions. The Legislative Assembly consists of ninety members, who hold their seats during the existence of the Parliament to which they are elected. The duration of any single Parliament is limited to three years.

(i.) *Particulars of Elections.* Since the introduction of responsible government in New South Wales there have been twenty-one complete Parliaments, the first of which opened on the 22nd May, 1856, and was dissolved on the 19th December, 1857, while the twenty-first opened on the 30th September, 1907, and closed on the 14th September, 1910. The average duration of the Parliaments was two years and seven months. The first session of the twenty-second Parliament was opened on the 15th November, 1910.

Particulars of voting at the last seven elections are given below:—

LEGISLATIVE ASSEMBLY ELECTIONS, NEW SOUTH WALES, 1894 to 1910.

Date of Opening of Parliament.	Electors upon the Roll.	Members Returned.	Members Unopposed.	Contested Electorates.			
				Electors upon the Roll.	Votes Recorded.	Percentage of Votes Recorded.	Percentage of Informal Votes.
7th August, 1894 ...	298,817	125	1	254,105	204,246	80.38	1.62
13th „ 1895 ...	267,458	125	8	238,233	153,034	64.24	0.88
16th „ 1898 ...	324,339	125	3	294,481	178,717	60.69	0.92
23rd July, 1901	346,184	125	13	270,861	195,359	72.13	0.79
23rd August, 1904 Males	363,062	90	2	304,396	226,057	74.26	0.59
23rd August, 1904 Females	326,428			262,433	174,538	66.51	
10th September, 1907 Males	392,845	90	5	370,715	267,301	72.10	*
10th September, 1907 Females	353,055			336,680	204,650	60.78	*
14th October, 1910 Males	458,626	87	3	444,242	321,949	72.47	*
14th October, 1910 Females	409,069			400,139	261,068	65.24	*

* Not available.

The franchise was extended to women in 1902, and was exercised for the first time at a State election in 1904.

4. **The Parliament of Victoria.**—Both of the Victorian legislative chambers are elective bodies, but there is a considerable difference in the number of members of each House, as well as in the qualifications necessary for members and electors. The number of members in the Upper House in March, 1911, was 34, and in the Lower House, 65. In the Legislative Council the tenure of the seat is for six years, but one member for each province retires every third year, except in the case of a dissolution, when one half of the newly elected members hold their seats for three years only. Members of the Legislative Assembly are elected for the duration of Parliament, which is limited to three years. An elector for the Legislative Assembly may only vote once, plurality of voting having been abolished in 1899; an elector, however, qualified in more than one district, may select that for which he desires to record his vote.

(i.) *Particulars of Elections.* Since the introduction of responsible government in Victoria there have been twenty-one complete Parliaments, the first of which was opened on the 21st November, 1856, and closed on the 9th August, 1859, while the twenty-first opened on the 9th July, 1907, and closed on the 3rd December, 1908. The first session of the twenty-second Parliament opened on the 9th February, 1909.

Statistics regarding the last four elections will be found below:—

PARTICULARS OF VICTORIAN ELECTIONS, 1902 to 1908.

Year.	Legislative Council.				Legislative Assembly.			
	Electors on Roll.	Electors in Contested Districts.	Voters in Contested Districts	Per-centage.	Electors on Roll.	Electors in Contested Districts.	Voters in Contested Districts.	Per-centage.
1902 ...	134,087	*	*	*	290,241	216,063	141,471	65.47
1904 ...	172,495	104,843	61,382	58.54	264,709	223,600	140,127	62.66
1907 ...	180,738	78,512	27,152	34.58	260,787	191,131	117,098	61.26
1908 ...	185,234	*	*	*	263,876	164,919	88,461	53.64

* Not contested.

As the table shews, the proportion of voters for the Legislative Council is considerably less than that for the Legislative Assembly. The number of persons who voted by post at the elections for the Legislative Assembly in 1908 was 3790.

5. **The Parliament of Queensland.**—No limit is set by the Constitution Act to the number of members of the Legislative Council of Queensland, the total at the latest available date being forty-four. Members are appointed by the State Governor, and it is provided that not less than four-fifths of the members must consist of persons not holding any office under the Crown, except officers of His Majesty's sea or land forces on full or half-pay, or retired officers on pensions. The members are nominated for life. The Legislative Assembly is composed of seventy-two members, returned from sixty-one electorates, eleven electorates returning two members each, the others being single electorates.

(i.) *Particulars of Elections.* Since the establishment of responsible government in Queensland there have been seventeen complete Parliaments, the first of which opened on the 29th May, 1860, and dissolved on the 20th May, 1863, while the seventeenth Parliament opened on the 3rd March, 1908, and closed on the 31st August, 1909. The eighteenth Parliament opened on 2nd November, 1909. Statistics regarding the elections of 1902, 1904, 1907, and 1909 are given below:—

ELECTIONS FOR QUEENSLAND LEGISLATIVE ASSEMBLY, 1902 to 1909.

Year.	Number of Seats.	Number of Candidates Nominated.	Candidates sent to the Poll.	Electors Enrolled.			Electors who Voted.			Percentage of Electors Voting in Contested Electorates.		
				Males.	Females	Total.	Males.	Females	Total.	Males.	Females	Total.
1902	72	159	154	108,548	—	108,548	80,076	—	80,076	76.88	—	76.88
1904	72	140	117	103,943	—	103,943	60,265	—	60,265	74.16	—	74.16
1907	72	185	179	125,140	95,049	220,189	—	—	152,049	73.42	68.64	71.61
1909	72	145	133	135,841	106,913	242,754	89,609	66,809	156,418	75.34	69.36	72.67

The election of 1907 was the first State election in Queensland at which women voted, the privilege being conferred under Act 5 Edw. VII., No. 1. Some of the returns did not separate the sexes in the figures respecting the number of electors who voted, and the percentage of males and females was therefore calculated on the total returns where the subdivision was made.

6. **Parliament of South Australia.**—In this State there is a Legislative Council composed of eighteen members and a House of Assembly with forty-two members, both chambers being elective. Under the Constitution Amendment Act, 1908, the State of

South Australia (including the Northern Territory) is divided into four Council Districts, of which one returns six members, and the other three return four members each, to the Legislative Council. For the purpose of electing members of the House of Assembly the State exclusive of the Northern Territory) is divided into twelve electoral districts, and the Northern Territory remains, as before, an electoral district returning two members. One of the electoral districts Torrens) returns five members; two (Adelaide and Alexandra) four members each; and the others return three members each.

(i.) *Particulars of Elections.* Since the inauguration of responsible government in South Australia there have been nineteen complete Parliaments, the first of which was opened on the 22nd April, 1857, and dissolved on the 1st September, 1859, while the nineteenth was opened on the 30th November, 1906, and terminated on the 28th February, 1910. The first session of the twentieth Parliament opened on the 2nd June, 1910. The elections for the last-named Parliament were held on the 2nd April, 1910. Particulars of voting at the elections of 1900, 1902, 1905, and 1910 are given below:—

PARLIAMENTARY ELECTIONS IN SOUTH AUSTRALIA, 1900 to 1910.

Year.	Electors on Rolls.			Electors Who Voted.			Percentage of Electors Voting.	
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.
LEGISLATIVE COUNCIL.								
1900 ...	38,688	9,854	48,542	21,403	3,907	25,310	55.32	39.65
1902 ...	38,413	13,496	51,909	29,978	7,940	37,918	78.04	58.83
1905 ...	39,011	13,873	52,884	28,820	8,328	37,148	73.88	60.03
1910 ...	48,145	16,157	64,302	32,540	9,356	41,896	67.59	57.91
LEGISLATIVE ASSEMBLY.								
1902 ...	77,147	72,030	149,177	53,471	36,545	90,016	62.14	49.22
1905 ...	95,396	92,249	187,645	64,330	50,246	114,576	67.43	54.47
1906 ...	96,724	93,438	190,162	60,109	45,997	106,106	69.31	50.73
1910 ...	94,656	88,762	183,418	73,464	56,830	130,294	77.61	64.03

The proportions of votes recorded to total persons entitled to vote in each of the four years given above were as follows:—Legislative Council, 52.14, 73.05, 70.24, and 77.64 per cent.; and Legislative Assembly, 55.80, 61.06, 60.34, and 71.04 per cent.

It is interesting to note that South Australia was the first of the States to grant women's suffrage (under Act No. 16 of 1894), the franchise being exercised for the first time at the Legislative Assembly election on the 25th April, 1896.

7. **Parliament of Western Australia.**—In this State both chambers are elective. For the Legislative Council there are thirty members, each of the ten electorates returning three members, while the Legislative Assembly is composed of fifty members, one member being returned by each of the fifty electoral divisions. At the expiration of two years from the date of election to a seat in the Legislative Council, and every two years thereafter, the senior member for the time being for each province retires. Seniority is determined (*a*) by date of election, (*b*) if two or more members are elected in the same day, then the senior is the one who polled the least number of votes, (*c*) if the election be uncontested, or in case of an equality of votes, then the seniority is determined by the alphabetical precedence of surnames and, if necessary, Christian names. Members of the Legislative Assembly are elected for three years.

(i.) *Particulars of Elections.* Since the establishment of responsible government in Western Australia there have been five complete Parliaments, the first of which was

opened on the 30th December, 1890, and was dissolved on the 22nd March, 1893, while the sixth Parliament was opened on the 23rd November, 1905, and closed on the 12th August, 1908. The first session of the seventh Parliament commenced on the 10th November, 1908. Particulars relating to the last four parliamentary elections are given in the table below. The figures refer to electors for the Assembly only, no returns being published with regard to voting at Council elections.

ELECTIONS FOR LEGISLATIVE ASSEMBLY, WESTERN AUSTRALIA, 1901 to 1908.

Year.	Electors on the Roll.			In Contested Districts.			Votes Recorded.			Percentage of Electors Voting.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
1901	74,874	16,648	91,522	67,967	14,775	82,742	29,832	8,255	38,087	44	56	46
1904	108,861	54,965	163,826	88,524	49,791	138,315	43,285	23,500	66,785	49	47	48
1905	79,025	42,697	121,722	65,296	36,706	102,002	33,482	19,435	52,917	51	53	52
1908	83,060	52,919	135,979	69,277	44,804	114,081	46,411	29,412	75,823	67	66	66

8. **Parliament of Tasmania.**—In Tasmania there are two legislative chambers—the Legislative Council and the House of Assembly, both bodies being elective. The Council consists of eighteen members, returned from fifteen districts, Hobart returning three, Launceston two, and the remaining thirteen districts sending one member each. For the Parliament which expired in March, 1909, there were thirty-five House of Assembly districts, each district returning one member, but, in accordance with the Constitution Amendment Act of 1906, upon the expiration of the last Assembly, either by dissolution or by effluxion of time, there are to be five House of Assembly districts, viz., the Commonwealth electoral districts, each district returning six members. This latter system came into force at the 1909 elections.

(i.) *Particulars of Elections.* The first Tasmanian Parliament opened on 2nd December, 1856, and closed on 8th May, 1861. There have been fifteen complete Parliaments since the inauguration of responsible government, the last one opening on 29th May, 1906, and dissolving on 26th March, 1909. The sixteenth Parliament opened on 29th June, 1909. Particulars of the voting at the last four elections are given hereunder:—

ELECTIONS, HOUSE OF ASSEMBLY, TASMANIA, 1900 to 1909.

Year.	Electors on Roll.		Electors in Contested Districts.		Votes Recorded.		Percentage of Electors Voting.	
	Males	Females.	Males.	Females.	Males.	Females.	Males.	Females.
1900 ...	39,002	...	29,022	...	18,872	...	65.02	...
*1903 ...	43,999	...	40,267	...	23,766	...	59.87	...
†1906 ...	47,400	41,629	37,120	33,415	23,128	17,194	62.30	51.46
†1909 ...	50,221	45,563	50,221	45,563	30,509	19,893	60.74	43.67

* Manhood suffrage, Act 64 Vic., No. 5. † Universal adult suffrage, Act 3 Edward VII., No. 13.

It is proposed to give, in a future issue of this book, particulars of the systems of preferential voting in force in certain of the States of the Commonwealth.

§ 3. Administrative Government.

In each State, as well as in the Commonwealth, the Government is administered by a number of chief departments, on lines similar to those on which administrative government is carried on in the United Kingdom. Reference has already been made to the creation of the Commonwealth Departments (see pages 795 and 796). In the States the number and functions of the administrative departments vary considerably. This

matter has also been referred to hereinbefore (see page 825). In many cases more than one department is under the control of a single Minister. The tabular statement given on this page and on the following pages shews the sub-departments, branches, etc., of each Ministerial Department in each State and in the Commonwealth, together with the Acts administered and other more important matters dealt with.

COMMONWEALTH ADMINISTRATIVE GOVERNMENT, 1911.

Departments, Sub-departments, Branches, etc.	Acts Administered.	Matters dealt with or under Control.
1. External Affairs— (*a*) Prime Minister's Office (*b*) Immigration.	Contract Immigrants, Extradition, High Commissioner, Immigration Restriction, Naturalisation, Northern Territory Acceptance and Administration, Emigration, Pacific Island Labourers, Papua, Royal Commissions.	Commonwealth Gazette, Communications with the States, Consular appointments, Federal Executive Council, external affairs, extra territorial fisheries, High Commissioner, immigration and emigration, aliens and naturalisation, Northern Territory, officers of Parliament, passports, relations with Pacific Islands, Royal Commissions, and dependencies of the Commonwealth.
2. Attorney-General's— (*a*) Crown-Solicitor. (*b*) High Court. (*c*) Patents, Copyright, Designs, and Trade Marks.	Conciliation and Arbitration, Copyright, Designs, High Court Procedure, Judiciary, Patents, Rules Publication, Service and Execution of Process, State Laws and Records Recognition, Trade Marks.	Bankruptcy and insolvency, bills of exchange and promissory notes, conciliation and arbitration, copyright, Crown Law offices, designs, divorce and matrimonial cases, foreign corporations, judiciary and courts, marriage, patents, Parliamentary drafting, recognition throughout Commonwealth of State laws, records, and judicial proceedings, service and execution throughout Commonwealth of State process and judgments, trade-marks.
3. Home Affairs— (*a*) Bureau of Census and Statistics. (*b*) Electoral Office. (*c*) Lands and Surveys. (*d*) Meteorological Office. (*e*) Public Works. (*f*) Public Service Commissioner.	Census & Statistics, Electoral, Electoral Divisions, Franchise, Governor-General's Residences, Lands Acquisition, Property for Public Purposes Acquisition, Public Service, Referendum (Constitution alteration), Representation, Seat of Government, Seat of Government Acceptance and Administration, Senate Elections.	Acquisition of lands, census & statistics, elections, franchise, Interstate Commission, Public Service, public works, railways, representation of the people, rivers, seat of Government, surveys.
4. Treasury— (*a*) Audit Office	Audit, Australian Notes, Bank Notes Tax, Invalid and Old-Age Pensions, Land Tax, Life Assurance (Companies), Surplus Revenue, Coinage.	Appropriation & supply, audit, banking, currency and coinage, Government printer, insurance, invalid & old-age pensions, public loans and moneys, State debts, taxation (other than Customs and Excise duties).
5. Trade and Customs— (*a*) Quarantine	Australian Industries Preservation, Beer Excise, Bounties, Commerce (trade descriptions), Customs, Customs Tariff, Distillation, Excise, Excise Tariff, Excise Procedure, Manufactures Encouragement, Quarantine, Sea-carriage of Goods, Secret Commissions, Spirits, Sugar Bounty, Marine Insurance, Bills of Exchange, Seamen's Compensation.	Bounties, buoys and beacons, customs and excise, insurance, lighthouses and lightships, quarantine, trade and commerce (including navigation and shipping), weights and measures.
6. Defence— (*a*) Naval Board (*b*) Military Board	Defence, Naval Agreement, Naval Defence.	Control of railways with respect to transport for naval and military purposes, naval and military defence.
7. Postmaster-General's—	Meteorology, Post and Telegraph, Post and Telegraph Rates, Tasmanian Cable Rates, Wireless Telegraphy.	Astromomical & meteorological observations, postal, telegraphic, and other like services.

NEW SOUTH WALES.—ADMINISTRATIVE GOVERNMENT, 1911.

Departments, Sub-Departments, Branches, etc.	Acts Administered.	Matters dealt with or under Control.
1. Premier's Office*— (*a*) Governor's Establishment. (*b*) Executive Council Office. (*c*) Agent-General. (*d*) Immigration & Tourists Bureau. (*e*) State Labour Bureau.	... ...	Is charged with—Departmental business connected with the Houses of Parliament, including official publication of debates, foreign correspondence, Executive Council, correspondence with Colonial, Commonwealth, and States Governments, Agent-General, Intelligence Department, Immigration.
2. Chief Secretary— (*a*) Audit Dept. (*b*) Police Dept. (*c*) Inspector-General of Insane. (*d*) Public Health Dept. (*e*) Master in Lunacy. (*f*) Medical Board. (*g*) Inspector of Charities. (*h*) Fisheries Board. (*i*) Aborigines Protection Board. (*j*) Board of Fire Commissioners. (*k*) Electoral Office. (*l*) International Exchanges Board. (*m*) Registry of Friendly Societies & Trade Unions. (*n*) Bureau of Microbiology. (*o*) Bureau of Statistics. (*p*) Dental Board.	Parliamentary Electorates and Elections, Electorates Redistribution, Women's Franchise, Lunacy, Audit, Agreements Validating, Apprentices, Banks and Bank Holidays, Birds Protection, Bread, Building & Co-operative Societies, Sunday Closing, Careless Use of Fire, Constitution, Dentists, Destitute Children's Society, Dog and Goat, Fire Brigades, Fisheries, Friendly Societies, Gaming and Betting, Inebriates, Medical Practitioners, Metropolitan Traffic, Native Animals Protection, Native Dogs Destruction, Noxious Trades, Obscene Publications, Police Offences, Police Regulation, Printing, Public Entertainments, Public Hospitals, Public Health, Quarantine, Sydney Corporation, Vagrancy, Weights and Measures, Pure Food, Theatres, etc., Cattle Slaughtering, etc., Dairies Supervision, Juvenile Smoking Suppression, Motor Traffic, Aborigines Protection.	Is charged with—the public seal, execution of capital sentences, appointment of magistrates, the police, public health, issue of theatrical & racecourse licenses, care and treatment of insane and inebriates, hospitals & charitable institutions, business relating to ecclesiastical establishments, supervision of dairies, general elections, franchise, statistics, and all matters of business not expressly assigned to any other department.
3. Treasury— (*a*) Stamp Duties Office. (*b*) Taxation Dept. (*c*) Government Printing Office. (*d*) Explosives Dept. (*e*) Shipping Offices, Sydney and Newcastle. (*f*) Navigation Dept. (*g*) Resumed Properties Office. (*h*) Stores Supply and Tender Board. The following departments are connected with the Treasury though administered by Commissioners :— (*a*) Government Railways and Tramways. (*b*) Sydney Harbour Trust. (*c*) Government Savings Bank.	Stamp Duties, Land & Income Tax, Merchant Shipping, Navigation, Wharfage and Tonnage Rates, Government Railways, Railways Commissioners Appointments, Sydney Harbour Trust, Government Savings Bank, Pharmacy, Explosives.	Finance, management of Consolidated Revenue, public works, closer settlement, Treasury guarantee, and general loan funds, also of public debt, resumed properties, payment of Imperial and State pensions, purchase and issue of stores, Govt. printing office, Govt. railways and tramways, Sydney Harbour Trust, navigation and shipping, storage and issue of explosives, engagement and discharge of seamen in British and colonial vessels, tenders and contracts for public supplies, etc., State clothing factory.
4. Dept. of Attorney-General and of Justice—† (*a*) Prothonotary & Registrar in Divorce. (*b*) Master in Equity. (*c*) Sheriff. (*d*) Registrar in Bankruptcy. (*e*) Registrar of Probates, etc. (*f*) Registrar Industrial Disputes. (*g*) Crown Solicitor. (*h*) Parliamentary Draftsman. (*i*) Clerk of the Peace. (*j*) Registrar of Sydney District Court. (*k*) Registrar-General. (*l*) City Coroner. (*m*) Children's Court. (*n*) Petty Sessions. (*o*) Police Magistrates, Clerks of Petty Sessions and Registrars of District Courts. (*p*) Prisons Department. (*q*) Public Service Board.	Auctioneers, Bankruptcy, Billiards, Companies, Contractors' Debts, Coroners, Crimes, District Courts, Fines and Penalties, Habitual Criminals, Hawkers and Pedlars, Industrial Disputes, Interstate Debts, Jury, Justices, Legal Process, Liens on Crops, Liquor, Lotteries, Marriage, Money-lenders, Crown Suits, Defamation, Newspapers, Pawnbrokers, Prisons, Public Service, Real Property, Registration of Births, Deaths, and Marriages, of Deeds of Firms, Sheriff, Small Debts Recovery, Stage Carriages, Wills, Probate and Administration.	Is charged with—business relating to the offices of the Chief Justice, and Puisne Judges, Supreme Courts, Industrial disputes and District Courts, Circuit Courts and Quarter Sessions, deals with all matters relating to remission of sentences, or of fines or estreats or control of Courthouses, etc., and advises the Govt. on all legal questions.

* This is not a separate department, but is attached to the Ministerial department held by the Premier for the time being. † Arrangements have recently been made for the redistribution of the functions of this Department between the Attorney-General's Department and that of the Minister of Justice and Solicitor-General.

NEW SOUTH WALES (continued).

Departments, Sub-Departments, Branches, etc.	Acts Administered.	Matters dealt with or under Control.
5. Department of Lands— (*a*) Survey of Lands. (*b*) Local Land Boards. (*c*) Trigonometrical Survey. (*d*) Land Appeal Court. (*e*) Western Land Board. (*f*) Closer Settlement Advisory Boards.	Crown Lands, Newcastle Pasturage Reserve, Conditional Purchaser's Relief, Public Roads, Public Parks, Public Gates, Public Trusts, Labour Settlements, Appraisement, Prickly Pear Destruction, Western Lands, Closer Settlement, Block-holders, Church and School Lands.	All business arising from tenures created by Crown Lands Acts, dedications and reservations, exchanges of land, proclamation of towns and villages, business connected with Land Appeal Court, local boards, district surveyors, and Crown land agents, survey of Crown lands, and triangulation survey of State, and making lands available for settlement.
6. Dept. of Public Works.— (*a*) Architects Branch. (*b*) Irrigation and Drainage. (*c*) Railway and Tramway Construction, Harbours and Water Supply. (*d*) Roads and Bridges. (*e*) Engineering Drafting. (*f*) Survey Drafting. (*g*) Survey. (*h*) Valuation. (*i*) Local Government. (*j*) Accounts. (*k*) Bonds and Contracts. (*l*) Dock Establishment. (*m*) Metropolitan Board of Water Supply and Sewerage, and (*n*) Hunter District WaterSupply and Sewerage Board.	Drainage Promotion, Public Watering Places, Water Rights, Water and Drainage, Artesian Wells, Public Works, Country Towns Water and Sewerage, Metropolitan and Hunter District Water and Sewerage, Scaffolding and Lifts, Local Government, Impounding, and all Acts connected with Public Works.	Erection, maintenance, and repair of public buildings and works; construction of harbour works, docks, water supply and sewerage works, artesian bores, tanks and wells, railways and tramways; "National" roads and bridges; surveys and valuations; administration of new Local Government Acts; construction of dredges and punts, machinery, etc.
7. Department of Mines— (*a*) Ministerial Branch. (*b*) Registrar and Enquiry. (*c*) Account and Examining. (*d*) Lease. (*e*) Charting and Mining Survey. (*f*) Geological Survey. (*g*) Geological Survey Laboratory. (*h*) Inspectors of Coal Mines and of Mines. (*i*) Miners' Accident Relief Board. (*j*) Prospecting Board. (*k*) Mining Museum. (*l*) Sludge Abatement Board.	Mining, Miners' Accident Relief, Mines Inspection, Coal Mine Regulation.	All matters relating to mining generally; geological and mining surveys; assays, inspection of mines, miners' accident relief, advances to prospectors.
8. Dept. of Agriculture—	Vine and Vegetation Diseases, Wine Adulteration, Fertilisers, Pastures Protection, Commons, Stock, Stock Diseases, Irrigation, Agricultural Society, Forestry. Wentworth Irrigation, Hay Irrigation, Trustees of Show Ground, Enabling.	Matters relating to agriculture, forestry and stock, including agricultural and experimental farms, stud farms and stations; Agricultural college, Botanic Gardens, Centennial Park and Domain, Sydney, Nursery Gardens, Campbelltown; irrigation farms, and supervision of dairies for instructional purposes; destruction and prevention of fruit pests; diseases of stock; publication of Agricultural Gazette and Bulletins.
9. Dept. of Public Instruction— (*a*) Public Library. (*b*) Observatory (*c*) National Art Gallery and Australian Museum. (*d*) State Children's Relief Dept. (*e*) Technical Education Branch. (*f*) Training College for Teachers. (*g*) Industrial Schools and Reformatories. (*h*) Hurlstone Continuation Agricultural School.	Public Instruction, State Children's Relief, Children's Protection, Infant Protection, Neglected Children and Juvenile Offenders, Anatomy, Public Library and Art Gallery, Australian Museum, School of Arts, University and University Colleges, Sydney Grammar School.	All matters dealing with education; high schools, district schools, continuation schools, subsidised teaching, technical education, scholarships and bursaries, medical inspection of school children, anthropometrical survey of school children, rural camp schools for city children, school agriculture.
10. Department of Labour and Industry.—	Early Closing, Factories and Shops, Shearers' Accommodation, Apprentices, Truck, Minimum Wage, Saturday Half Holiday.	All matters relating to regulation of working conditions in factories and shops, early closing, wages awards, industrial matters generally

VICTORIA.—ADMINISTRATIVE GOVERNMENT, 1911.

Departments, Sub-Departments, Branches, etc.	Acts Administered.	Matters dealt with or under Control.
1. Chief Secretary— (*a*) Board for the Protection of Aborigines. (*b*) Public Service Commissioner. (*c*) Registry of Friendly Societies. (*d*) Observatory. (*e*) Government Statist. (*f*) Marine Board. (*g*) Audit. (*h*) Lunacy. (*i*) Explosives. (*j*) Mercantile. (*k*) Marine. (*l*) Neglected Children and Reformatory Schools. (*m*) Penal and Gaols. (*n*) Police. (*o*) Premier's Office. (*p*) Inspection of Stores. (*q*) Public Library. (*r*) Government Shorthand Writer.	Aborigines, Animals Protection, Constitution, Crimes, Explosives, Fire Brigades, Friendly Societies, Gaols, Inebriates, Libraries, Licensing (part), Lunacy, Marine, Marine Stores and Old Metals, Medical, Neglected Children, Poisons, Police Offences, Police Regulations, Public Service, Registration of Births, Deaths and Marriages, Theatres, Weights and Measures, Lotteries and Gaming, Dentists, Indeterminate Sentences, Infant Life Protection, Statistics, and Opium (part), Motor-car, Electoral.	Departmental business connected with the Houses of Parliament, execution of capital sentences, local option, prisons, the Govt. Gazette, Public Library, Museum, and Art Gallery, "Hansard," Police, and other matters as indicated in columns 1 and 2.
2. Attorney-General and Minister of Justice— (*a*) Supreme Court. (*b*) County Court. (*c*) Crown Law Offices. (*d*) Crown Solicitor. (*e*) Master in Equity and Lunacy. (*f*) Prothonotary. (*g*) Registrar of Titles. (*h*) Sheriffs.	Supreme Court, County Court, Coroners, Justices, Licensing (part), Probate, Crimes, Juries, Declarations & Affidavits, Children's Courts, Companies, Conveyancing, Crown Remedies, Registration of Firms, Hawkers, Insolvency, Instruments, Mines (part), Money-lenders, Pawnbrokers, Real Property, Transfer of Land, Stamps, Trusts, Book Debts, and Imprisonment of Fraudulent Debtors.	Bankruptcy and insolvency, administration and probate, control of courthouses, etc., preparation of legal instruments, administration of justice generally, and advice to Government in all legal questions.
3. Treasury— (*a*) Land and Income Tax Office. (*b*) Printing Office. (*c*) Curator of Intestate Estates. (*d*) Charities. (*e*) Tender Board.	Auction Sales, Hospitals and Charities, Public Moneys, Savings Bank, Income Tax, Licensing (part), and Acts relating to loans.	Conduct of finances, Government banking, the public debt, preparation of Estimates and Budget, financial aid to charities, endowment to municipal institutions.
4. Public Instruction—	Education, Teachers, Registration of Teachers and Schools.	Education generally, supervision of the Training College, registration of teachers & schools.
5. Railways—	Railways and other Acts relating to specific railways and railway loans.	Management and maintenance of Government railways and electric trams.
6. Mines—	Mines, Gold Buyers, Boilers Inspection, Mines Development, Coal Mines Regulation.	Deals with applications for mining leases and licenses, water-rights, prospecting.
7. Water Supply—	Water, Waterworks Construction, Water Supply, Loans Application.	Administration of various water works trusts, construction of water works and irrigation systems, boring for water.
8. Agricultural—	Agricultural Colleges, Vegetation Diseases, Stock Diseases, Milk and Dairy Supervision, Artificial Manures, Thistle, and Vine Diseases, Sheep Dipping.	Agricultural colleges & experimental farms, orchards, vineyards, and horticultural gardens, dissemination of information regarding agricultural etc. pursuits, lectures and demonstrations in practical and theoretical agriculture, etc., "Agricultural Journal" and "Agricultural Year Book."
9. Lands— (*a*) Survey. (*b*) Botanic Gardens and Domain. (*c*) Land Purchase & Management Board. (*d*) Advertising & Intelligence Department (Immigration).	Lands, Closer Settlement, Vermin Destruction, Local Government (part), Seed Wheat Advances, Bush Fires Loan, State Aid Abolition, Mines (part).	Survey, sale, and administration of Crown lands, including occupation for industrial, agricultural, and pastoral purposes. Immigration.

VICTORIA (continued).

Departments, Sub-Departments, Branches, etc.	Acts Administered.	Other Matters dealt with or under Control.
10. Public Works— (*a*) Roads and Bridges and Local Govt. Brch. (*b*) State Schools. (*c*) Dredges and Snagging. (*d*) Ports and Harbours.	Local Government, Fisheries, Game, Electric Lighting and Power, Pounds, Dog, Unused Roads and Water Frontages, Tramways, Drainage Areas, Municipal Grounds, Upper Yarra Traffic.	Construction of public works, erection and repairs of all Government buildings, railway construction, lighthouses, buoys, and signal stations, snagging operations in rivers, Alfred Graving Dock, Government steamer, immigration.
11. Labour—	Factories and Shops, Servants Registry Office.	Inspection of factories, workshops and shops, wages boards.
12. Forests—	Forests.	
13. Public Health—	Health, Cemeteries, Pure Food.	Public health generally, inspection of food.

QUEENSLAND.—ADMINISTRATIVE GOVERNMENT, 1911.

1. Chief Secretary— (*a*) Auditor-General. (*b*) Agent-General. (*c*) Board of Exchange of Publications. (*d*) Govt. Residency, Thursday Island. (*e*) Immigration Dept. (*f*) Intelligence and Tourist Bureau. (*g*) S.S. *Lucinda*. (*h*) Pub. Library, Art Gallery, and Museum.	Constitution, Extradition, Immigration, Officials in Parliament, Pacific Island Labourers, Public Service, Standard Time, Influx of Criminals Prevention.	Commissions, etc., under Public Seal of State, foreign correspondence, immigration, justices of the peace, legislation, public service, communications with Governor and with States, Commonwealth, British, colonial, and foreign Governments.
2. Public Instruction—	University, Grammar Schools, State Education, Central Technical College.	Primary education, schools of art and technical colleges, grammar schools.
3. Railways—	Railways, Railway Construction, (Land Subsidy), Railways (Employés' Appeal).	Railways and tramways management and construction.
4. Home Secretary— (*a*) Government Advertising Board. (*b*) Electoral Department. (*c*) Board of Health. (*d*) Registrar-General. (*e*) Dental Board. (*f*) Local Auditors Board. (*g*) Medical and Pharmacy Board. (*h*) Aborigines. (*i*) Benevolent Asylum. (*j*) Police. (*k*) Prisons. (*l*) Orphanages.	Aboriginals, Bank Holidays, Brisb. Traffic, Careless Use of Fire, Carriers, Cemetery, Charitable Institutions, Children's Protection, Contagious Diseases, Dental, Elections, Fencing, Fire Brigades, Hawkers, Health, Hospital, Industrial Schools, Inebriates, Insanity, Legitimations, Leprosy, Licensing, Local Govt., Medical, Native Labourers, Party Processions, Pharmacy, Police, Prisons, Quarantine, Religious, etc., Institutions, Registration Births, etc., Poisons, Statistical Returns, Water Police.	Is charged with business connected with—aboriginals, cemeteries, elections, fire brigades, hospitals and charitable institutions, industrial and reformatory schools, insanity, lazarets, police, prisons, public health, quarantine, remission and execution of sentences and penalties, theatres, miscellaneous services, and all other matters of internal arrangement not confided to any other Minister.
5. Treasury— (*a*) Government Analyst. (*b*) Govt. Printing Office. (*c*) Government Savings Bank. (*d*) Government Stores. (*e*) Harbours and Rivers Department. (*f*) Income Tax Department. (*g*) Marine Department. (*h*) Marine Board. (*i*) Water Supply Department. (*j*) Comptr. of Central Sugar Mills.	Coast Survey, Explosive, Fisheries, Savings Banks, Annuities, Harbour Boards, Harbour Dues, Income Tax, Irrigation, Loans, Local Wks. Loans, Merch'nt Shipping and Seamen's, Navigation, Oyster, Pearlshell and Bêche-de-mer, Port Dues Revision, Firms Registration, Stock Inscription, Sugar Works, Treasury Notes and Bills, Tobacco, Water Authorities, Weights and Measures.	Central sugar mills, dredges, fisheries, finance generally, harbour boards and improvements, navigation, ports and harbours, powder magazines, public debt, savings banks, taxation generally, trade and commerce, wharves and jetties.
6. Attorney-General— (*a*) Crown Solicitor. (*b*) Supreme & District Courts. (*c*) Curator in Intestacy and Insanity. (*d*) Trustees in Insolvency. (*e*) Registry of Friendly Societies. (*f*) Registry of Titles. (*g*) Com. of Stamps. (*h*) Police Magistrates. (*i*) Petty Sessions.	Building Societies, Companies, District Courts, Friendly Societies, Inquests of Death, Inquest on Fires, Insolvency, Intestacy, Jury, Printing, Real Property, Small Debts, Stamp, Succession and Probate, Supreme Court, Totalisator Restriction, Totalisator Tax, Trade Unions.	Administration of justice generally, advising Government on all legal questions, judicial establishments, courts of petty sessions, preparation of all legal instruments and contracts.
7. Mines— (*a*) Geological Survey. (*b*) Mining Registries. (*c*) Mines Inspctrs. (*d*) Gold Wardens.	Gold Mining, Mineral Lands, School of Mines.	Geological survey, mineral fields, regulation of mines, Charters Towers School of Mines.

QUEENSLAND (continued).

Departments, Sub-Departments, Branches, etc.	Acts Administered.	Matters dealt with or under Control.
8. Public Lands— (*a*) District Land Offices. (*b*) District Survey Offices. (*c*) Survey Office.	Agric. Lands Purchase, Crown Lands, Pastl. Leases, Pub. Parks, Pub. Works, Land Resumption. Rabbit, Marsupial-proof Fencing, Trustees of Public Lands.	Destruction, etc., of rabbits, opening and closing roads, reserves, survey, sale, settlement, and occupation of Crown lands, town commonages.
9. Agriculture— (*a*) Agricultural College. (*b*) Inspectors of Stock and Sheep & Registry of Brands. (*c*) Botanic Gardens. (*d*) State Farms and Nurseries. (*e*) Sugar Experiment Stations.	Agric. Bank, Brands, Dairy, Diseases in Plants, Sheep and Stock, Game & Fish Acclimatisation, Grape-vine Diseases, Live Stock and Meat Export, Marsupial Boards, Meat and Dairy Produce Encouragement, Native Birds Protection, Slaughtering, Shearers' and Sugar-workers', Sugar Experiment Stations.	Agric. College, Botanic Gardens, brands (horses, sheep, and cattle), diseases in animals and plants, loans in aid of co-operative agric. production, marsupial destruction, meat and dairy produce encouragement, slaughter of cattle for consumption, State farms and nurseriesl sugar experiment stations.
10. Public Works— (*a*) Government Architect. (*b*) Engineer for Bridges. (*c*) Director of Labour. (*d*) Factories etc. Inspectors. (*e*) Inspector of Machinery.	Brisb. Water Supply, Electric Light and Power, Factories and Shops, Wages Bds., Inspection of Machinery and Scaffolding.	Construction of public buildings, State-school buildings, bridges, hospitals, electric light and power stations.

SOUTH AUSTRALIA.—ADMINISTRATIVE GOVERNMENT, 1911.

1. Chief Secretary— (*a*) Statistical Dept. (*b*) Audit. (*c*) Public Actuary, (*d*) Sheriff. (*e*) Registry-General. (*f*) Government Printer. (*g*) Police. (*h*) Central Board of Health. (*i*) Hospitals. (*j*) Lunatic Asylum. (*k*) Destitute Persons. (*l*) State Children. (*m*) Government Shorthand Writer.	Civil Service, Audit, Friendly Societies, Registration of Births, Deaths, and Marriages, Prison, Police Prisons, Sheriff, Legitimation, Public Hospitals, Lunatics, Destitute Persons, Affiliation Law, State Children's, Health, Vaccination, Sale of Food and Drugs, Places and Public Entertainments, and other Acts dealing with law and order.	Chamber of Manufactures, Civil Service exams., fire brigades, kerosene inspectors, public charities, Royal commissions, prisons, State printing, inspectors of public houses, administration of hospitals, asylums, etc., pub. health, law and order, police prisons, and correspondence with Governor, judges of Supreme Court, Leg. Council, House of Assembly, other Governments, and consuls.
2. Treasury— (*a*) Land and Income Tax Department. (*b*) Stamp Duty Department. (*c*) Agent General in London.	Motor Vehicles, Seed Wheat, Unclaimed Moneys, Oyster Fishery, Pawnbrokers, Appraisers, Auctioneers, Publicans' Licenses Hawkers' Licenses, Taxation, Phylloxera, Stamp Duty.	Banking, finance and taxation generally, Imperial and other Government pensions, Public Service Superannuation Fund.
3. Attorney-General— (*a*) Law Officers. (*b*) Pub. Trustees. (*c*) Curator of Convicts' Estates. (*d*) Supreme Ct. (*e*) Registrars of Industrial Soc., etc., in Admiralty, of Probates, of Companies, and of Building Soc. (*f*) Insolvency Court. (*g*) Police and Local Courts. (*h*) Licensing Benches. (*i*) Coroners. (*j*) Electoral Dept.	Administration and Probate, Public Trustee, Supreme Court, Legal Practitioners, Succession Duties, Companies, Insolvency, Police, Criminal Law, Local Courts, Real Property, Bills of Sale, Preferable Liens, Workmen's Liens, Deposit of Deeds, Coroners,' Electoral Code, Acts in which magistrates have jurisdiction.	Responsible for Government Parliamentary bills and administration of Local Option and Electoral Acts. Deals with issue of summonses and warrants and with preparing informations and plaints, licenses, franchise, appeals from courts.
4. Crown Lands and Immigration, and Mines— (*a*) Crown Lands Office. (*b*) Mines Department. (*c*) Roads Department. (*d*) Govt. Veterinary Surgeon. (*e*) Woods and Forests Dement. (*f*) Tourist Bureau. (*g*) Intelligence Department. (*h*) Survey Department. (*i*) Stock and Brands Department. (*j*) Fisheries Department.	Corporations, District Councils, Dog, Fisheries, Manufacturing Districts, Ornamental Grounds, Blocker's Loan, Fences, Bird Protection, Game, National Park, Noxious Weeds, Wild Dog and Foxes, Reclaimed Swamps and Irrigation, Mining, Gold Dredging, Roads, Main Roads, Woods and Forests, Pastoral, Vermin, Licensed Surveyors, Weights and Measures, Brands, Stock Diseases, Scab, Commerce, Botanic Garden, Advances to Settlers.	Matters affecting municipal corporations respecting the Acts under which they are constituted. Payment of main road grants, subsidies, and license fees. All matters affecting Crown lands or arising under mining Acts, warden's courts, record of assays, roads and bridges, veterinary science, immigration, forest reserves, surveys, botanic gardens, fisheries, issue of monthly bulletins.

SOUTH AUSTRALIA (continued).

Departments, Sub-Departments, Branches, etc.	Acts Administered.	Matters dealt with or under Control.
5. **Public Works**— (*a*) Railways Department. (*b*) Engineer-in-Chief's Department. (*c*) Hydraulic Engineer's Department. (*d*) Works and Buildings and Labour Bureau Department (*e*) Marine Board Department. (*f*) Control of Government Wharves Department. (*g*) Supply and Tender Board Department. (*h*) Aborigines Department.	Railway Commissioners, Railways Service Appeal Board, Refreshment Rooms, South-eastern Drainage, Water Conservation, Waterworks, Sewers, Murray River Works, Adelaide Cemetery and Cremation. Marine Board and Navigation, Renmark Irrigation Trust, Municipal Tramways Trust.	Construction and maintenance of railways, south-eastern drainage works, water conservation works and artesian boring, construction of roads outside districts councils, town and country waterworks, Adelaide, Glenelg, and Port Adelaide sewers, weirs, locks, and other improvements River Murray, State Government buildings and Adelaide cemetery, harbours, jetties, lighthouses, and dredging, ministerial control of Renmark Irrigation Colony and Adelaide Municipal Trust, care of the aborigines.
6. **Education**— (*a*) Education Department (*b*) Adelaide University. (*c*) Adelaide School of Mines. (*d*) Country Schools of Mines. (*e*) Public Library, Museum, and Art Gallery. (*f*) Observatory.	Education, Adelaide University, Degrees in Surgery, University Site, Public Library, Museum and Art Gallery, School of Mines.	Education generally, including primary, secondary, technical, and university, institutes, astronomical (but not meteorological) work.
7. **Department of Industry**—	Conciliation, Factories, Early Closing, Sale of Furniture, Scaffolding, Lifts, Shearers' Accommodation.	Factories, shops, early closing, industrial disputes, etc.
8. **Agriculture**— (*a*) Department of Agriculture. (*b*) Advisory Board of Agriculture. (*c*) Agricultural College. (*d*) Dairy Department. (*e*) Poultry Department. (*f*) Horticultural Department. (*g*) Bacteriology Department. (*h*) Produce Department. (*i*) Irrigation. (*j*) Experimental Farms.	Wine and Brandy, Fertilisers, Vine, Fruit and Vegetable Protection, Commerce, Hay and Chaff, Insecticides, Phylloxera,	Scientific farming, agricultural colleges and experimental farms, agricultural instruction and general development of agriculture, handling and shipping of produce.

WESTERN AUSTRALIA.—ADMINISTRATIVE GOVERNMENT, 1911.

1. **Colonial Secretary**— (*a*) Accountant. (*b*) Aborigines. (*c*) Fisheries. (*d*) Friendly Societies. (*e*) Gaols. (*f*) Government Gardens. (*g*) Harbour and Lights. (*h*) Immigration, Tourist and General Information. (*i*) Inspection of Liquors. (*j*) Lunacy. (*k*) Medical, Public Health and Factories. (*l*) Observatory. (*m*) Police. (*n*) Public Charities, State Children, and Government Labour Bureau. (*o*) Registry and Statistical. (*p*) Rottnest Island.	Aborigines, Bread, Bank Holidays, Building Societies, Bunbury Harbour Board, Bills of Lading, Boulder Turf Club, Boat Licensing, Conspiracy and Protection of Property, Co-operative and Friendly Societies, Coasting Vessels, Dentists, District Fire Brigades, Dog, Early Closing, Employment, Brokers, Fremantle Harbour, Friendly Societies, Fisheries, Factories, Game, Harbours and Rivers, Hospitals, Health, Industrial Conciliation, Jetties, Bridges, etc., Kalgoorlie Turf Club, Lunacy, Licensing of Boats, Municipal Corporations, Merchant Shipping, Marriage, Marine Stores, Medical, Newspaper Libel, Navigation, Oyster Fisheries, Public Institutions, etc., Lands Improvement, Poor House Discipline, Prisons, Pearl Shell Fisheries, Pearl Dealers' Licensing, Police, Police Benefit Fund, Pharmacy and Poisons, Perth High School, Quarantine, Registration of Births, Deaths and Marriages, Royal Commissioners' Powers, Statistical, State Children, Shark Bay Pearl Shell Fishery, Seamen, Shipping, Trespass, Trades Unions, Truck, Toll from Wharves, etc., University Endowment, Vaccination, Workers' Compensation, Workmen's Wages, W.A. Turf Club.	Consuls, municipalities, passports, inspection of fisheries, protection of aborigines, actuarial industrial arbitration, friendly societies, trades unions, prisons, Government gardens, light-houses and signal stations, harbours and rivers, coastal surveys, immigration, tourist and general information, immigration bureau (Fremantle), Immigrants' Home (Perth), inspection of liquors, hospitals, hospitals for insane, early closing, sanitation, factories, astronomical, police, poor relief, labour bureau, births, marriages and deaths, statistics, children's courts, old men's home, old women's home, penal settlement, Government cottages. Rottnest Island.

WESTERN AUSTRALIA (continued).

Departments, Sub-Departments, Branches, etc.	Acts Administered.	Matters dealt with or under Control.
2. Treasury— (*a*) London Agency. (*b*) Printing Dept. (*c*) Savings Bank. (*d*) Lithography. (*e*) Stores. (*f*) Audit. (*g*) Taxation.	Loan, Inscribed Stock, Treasury Bills, Auctioneers, Stamp, Wines, Beer and Spirits Sale, Employment Brokers, Gun Licensing, Gov. Savings Bank, Audit, Land and Income Tax, Dividend and Totalisator Duties.	Finance generally, general stores, taxation generally, audits as provided by special Acts, also under Ministerial authority.
3. Attorney-General— (*a*) Crown Law Offices. (*b*) Supreme Court. (*c*) Stipendiary Magistrates. (*d*) Land Titles Office. (*e*) Electoral Office. (*f*) Official Receiver. (*g*) Curator of Intestates' Estates. (*h*) Sheriff.	Administration of Justice, Association Incorporation, Bankruptcy, Criminal Code, Compensation for Accidents, Crown Suits, Electoral, Firms' Registration, Foreign Companies, Fugitive Offenders, Justice, Libel, Licensing Laws, Magisterial Districts, Workmen's Wages, Penalties Remission, Quarter Sessions, Supreme Court Acts, Truck Act, Transfer of Land, Workers' Compensation, Intestate Estates.	Criminal and civil law, conveyancing, parliamentary drafting, sheriffs, bankruptcy, intestacy, licensing, petty debts, petty sessions and police courts, land titles and registration of deeds and leases, elections.
4. Public Works— (*a*) Engineering Division. (*b*) Architectural Division.	Roads Board, Water Boards, Public Works, Tramways, Electric Light, Drainage.	Public buildings and works generally, metropolitan waterworks, Fremantle and Claremont water supply, railway and tramway construction.
5. Agricultural— (*a*) Stock and Brands. (*b*) Rabbit Branch. (*c*) Orchard and Insect Pests. (*d*) Markets & Refrigerating Works. (*e*) Entomological. (*f*) Public Abattoirs. (*g*) Irrigation in Agricultural Areas. (*h*) Vegetable Pathology and Botany. (*i*) Dairying. (*j*) Tropical Agriculture. (*k*) Experimental Farms. (*l*) Clearing by Traction Engine. (*m*) Horticultural.	Rabbit, Stock Diseases, Scab, Brands, Insect Pests, Noxious Weeds, Fertilisers and Feeding Stuffs, Contagious Diseases in Bees, Droving, Abattoirs, Vermin.	Agricultural, horticultural, and pastoral pursuits generally, irrigation, abattoirs and refrigerating works.
6. Education— (*a*) Technical Education.	Education.	Primary and technical education, inspection of schools, training of teachers, technical education.
7. Railway—	Government Railways.	Management, maintenance and control of Govt. Railways.
8. Mines— (*a*) Explosives and Analytical. (*b*) Inspection of Machinery. (*c*) Mining Engineers. (*d*) Mines Water Supply. (*e*) Geological Survey. (*f*) State Batteries.	Mining, Sluicing and Dredging for Gold, Explosives, Inspection of Machinery, Mines Regulation, Coal Mines, Mining Development.	Mining generally, water supply and stock routes on the goldfields, State batteries and reduction plants.
9. Lands— (*a*) Lands and Surveys. (*b*) Woods and Forests.	Land, Roads, Cemeteries, Licensed Surveyors, Bush Fires, Timber Regulations.	All business in connection with holdings under the Lands Acts, forest reserves, roads, land selection, district survey offices, land agencies.

TASMANIA.—ADMINISTRATIVE GOVERNMENT, 1911.

Departments, Sub-Departments, Branches, etc.	Acts Administered.	Matters dealt with or under Control.
1. Premier— (*a*) Governor's Establishment. (*b*) Premier's Dept. (*c*) Executive Council. (*d*) Agent-General.	... ...	Correspondence with State, Federal, Colonial, British, and and Foreign Govts., with Agent-General & Governor, despatches from Secretary of State referred by the Governor, matters submitted by other Ministers.
2. Chief Secretary— (*a*) Houses of Parliament. (*b*) Electoral. (*c*) Audit. (*d*) Statistical & Registration. (*e*) Inspection of Machinery. (*f*) Fisheries. (*g*) Public Buildings. (*h*) Charitable Institutions. (*i*) Boys' Training School. (*j*) Invalid Depôt. (*k*) Neglected Children's Department. (*l*) Medical Institutions. (*m*) Hospitals. (*n*) Public Health. (*o*) Explosives. (*p*) Public Service Board.	Audit, Bank Holidays, Cemeteries, Coroners, Registration of Births and Deaths, Botanical Gardens, Charitable Institutions, Electoral, Fire Brigades, Fisheries, Hospitals, Inebriates, Museum and Art Gallery, Newspapers, Pensions, Pharmacy, Public Health, Public Service, Vaccination.	Charitable institutions, cemeteries, public health, electoral, franchise, fisheries, immigration, machinery, statistics, training & industrial schools, public service, explosives.
3. Treasury— (*a*) Taxes. (*b*) Printing. (*c*) State Savings Bank. (*d*) Agricultural Bank. (*e*) Merchant Ship's Officers Exam. Board.	Suppression of Public Betting, Licensing, Billiard Tables Licensing, Stamp Duties, Auction, Pawnbrokers, Public Debts, Loans to Local Bodies, Land Tax, Taxation, Income Tax, Assessment, Savings Bank, State Advances, Merchant Ship's Officers' Examination.	Finance generally, collection of internal revenue and of stamp duties, Government printing.
4. Mines—	Mining, Mining Companies, Mining Companies (Foreign).	All matters arising under Acts dealing with mining, registration of mining companies.
5. Lands— (*a*) Lands Branch Office, Launceston. (*b*) Agricultural and Stock Dept. (*c*) Council of Agriculture.	Crown Lands, Closer Settlement, Game Protection, Stock, Diseased Animals, Contagious Diseases (cattle), Rabbits Destruction, Californian Thistle, Vegetation Diseases, Codlin Moth.	Crown lands and surveys, agriculture and stock.
6. Public Works—	Railway Management, Public Works, Local Government.	Construction and control of public works, including railways.
7. Attorney-General— (*a*) Supreme Court. (*b*) Lands Titles. (*c*) Sheriff. (*d*) Magistracy. (*e*) Police.	Probate, Stamp Duties, Foreign Companies, Legal Practitioners, Real Property, Prisons, Bankruptcy, Local Courts, Infant Life Protection, Motor Traffic, Police, Police Regulation.	Courts of law, gaols, justices of the peace and coroners, lands titles, police, registration of deeds, Supreme Court & Judges.
8. Education—	Education.	Primary & technical education, University of Tasmania.

SECTION XXVI.

LOCAL GOVERNMENT.

§ 1. Introduction.

1. **Systems of Local Government.**—In all civilised nations, whatever the previous course of their constitutional history, the persistent and rapid growth of the functions of the central Government, with repeated assumptions of new and onerous duties and responsibilities, has rendered some attempts at decentralisation and some form of local government essential. Without such a relief national administration could be carried on with success only with great difficulty, if at all. Experience, ancient and modern alike, has demonstrated that a completely centralised bureaucracy—that is, a body of officials working from a single centre and responsible only to itself—cannot carry on indefinitely the administration of a large country; such a body tends to ignore the varieties of local conditions, to become stereotypped in its ideas and methods, and sooner or later breakdown is inevitable. There are two possible policies which a Legislature may adopt towards local authorities apart from the imposition of compulsory duties upon them. There is first (*a*) the grant of general power to all local bodies of a particular class - that is, the Legislature may establish a set of authorities and empower them to do anything which in their judgment will tend to promote the satisfactory administration and general well-being of the areas under their control, so long as any particular powers which they propose to use are not expressly prohibited or reserved to other authorities. But as this liberty might easily in some cases be abused, there is necessarily the restriction, of greater or less extent according to the country and the nature of the authorities in question, that the actual exercise of these general powers shall be subject to the approval of an administrative department of the central Government. Or, on the other hand, the Legislature may (*b*) grant only specific powers to local bodies—that is, may give them permission to do all or any of a number of enumerated things, with or without the approval of the central departments, and in this case nothing further can be done by the local body unless permitted by fresh legislative enactments. In a general way it may be said that legislation on the continent of Europe has ordinarily followed the first of these two methods, and has given to the local self-governing communities power to do anything for which they can get administrative approval; while in the Commonwealth, as well as in Great Britain and in the United States, the practice has been the opposite one—local authorities are empowered to do only specified things; but in order, in spite of this, to allow free play to local initiative and enterprise, parliamentary procedure permits of local authorities being able to obtain additional powers for particular works or undertakings by means of special Acts. This difference between the Australian or British and continental systems has two important results.

(i.) *Difference between Australian and Continental Systems.* (*a*) The first important result of this difference is that in Australia, England and the United States the enterprise and activity of local authorities depend upon the temper and ideas of Parliament—that is to say, upon the elected representatives of the nation; whilst throughout a large

part of the continent of Europe the controlling influence is ordinarily exercised by a bureaucracy whose opinion upon the matters in question may or may not be coincident with that of the majority of the electorate. The result is that in Australia it is the business of the State Parliaments to determine what powers are to be conferred upon local authorities, while, ordinarily, under the continental systems the administrative bodies have to regulate what the local authorities may or may not do. The efficiency of such continental systems depends almost entirely upon the character of the controlling bureaucracy, although it is true that the legal powers of a municipality under that system might be very much wider than those of a municipal council in Australia. If the bureaucracy is enterprising and ready to encourage and aid in every way the growth of local action and experiment—as it is in Prussia—then there is the largest scope for municipal development; but if, as in France, the bureaucracy is conservative in its ideas and slow to move, the action of local authorities remains cramped and limited.

(*b*) The second important result of the difference between the Australian and continental systems is that in all matters entrusted to them local authorities in Australia consider that their duty is to carry out the law according to the will of, and in the manner desired by, the ratepayers of their local areas, subject generally to the supervision of the central Government, whereas on the continent of Europe local authorities regard themselves normally as bodies appointed to carry out, within their respective localities, the will of the central Government, even in such matters as are of purely local importance. Local authorities under the continental systems are responsible to the central Government and are subject to administrative control, whilst in Australia municipal councils, so long as they do not infringe the Acts under which they are constituted, or which they have to administer, are responsible only to the ratepayers of their respective localities.

(ii.) *Various Systems in the Several States of the Commonwealth.* In all the States of the Commonwealth, Acts have now been passed providing for comprehensive schemes for the decentralisation of power by the constitution of various forms of local authorities to deal with a large variety of subjects and matters. The general policy of the Legislatures towards local authorities in Australia has already been pointed out. Generally speaking, these authorities exercise their powers under enactments of two kinds. (*a*) There are, first, what may be called constituent Acts, which create the various classes of local bodies and arm them with the powers necessary for the fulfilment of the duties intended to be discharged by them, and there are, secondly (*b*) general Acts dealing with one subject or group of subjects, of administration—such as the Public Health Acts—and giving power to the local authorities for that particular service. Although the Acts controlling local government in the several States vary considerably in detail, especially as regards the election of councillors and presiding officers, method of valuation, and rating powers, there is a great similarity between the powers and duties conferred and imposed upon local authorities in the various States; these powers and duties are many and varied. As a rule the municipal council is the highway authority, being responsible for all the roads within its area and the upkeep of all bridges; it is a public health authority; it supervises the sanitary work, the water supply and the lighting of its area, and for these and for other purposes may appoint officers; it administers the Acts relating to the sale of foods and drugs, the slaughter and diseases of animals, weights and measures, and river pollution; it may establish hospitals, public recreation grounds, libraries, and museums, and may provide asylums and support charitable institutions; it may make provision for preventing fires and floods; it administers the municipal property, makes by-laws with regard to a large variety of things and matters, and may acquire other powers by petition to the Governor. The councils are elected by the ratepayers and seek only to carry out the wishes of the electorate, subject to the general supervision of the central Governments.

(iii.) *Systems on the Continent of Europe.* On the continent of Europe a careful distinction is generally drawn between those internal affairs in which the central Govern-

ment is thought to be directly concerned and those which are held to be primarily of only local interest. In Prussia, for instance, the former includes, besides the army, State taxes and domains, ecclesiastical affairs, police, and the general supervision of local authorities, while to the localities are left roads, poor relief, and a number of miscellaneous matters. The work of the central Government is deconcentrated, that is to say, the country is divided into districts, in each of which there is a delegation of the central authority, doing its work and thereby decreasing the pressure upon the head offices. The executive agents in each locality are elected by the inhabitants, but they are also the representatives of the central Government, and as such they are members of the bureaucracy and are under its control, with the consequence that they look to the central Government for guidance and direction in regard to local affairs. Local government is in fact weak; it is not so much the exercise of the will of a locality by the central power, as the exercise of the will of the latter by the locality. The system of deconcentrated centralised control as carried out in Prussia has, however, some distinct advantages.

(*a*) In the first place the duties of supervising the actions of a large number of local authorities do not rest only upon a comparatively small number of officials at the seat of Government, but are carried out by delegations in all parts of the country, which are able to acquire a more intimate knowledge of local requirements and conditions.

(*b*) Secondly, the supervision is not only by Government officials, but by responsible and experienced persons elected by the inhabitants and who command local confidence. The general results are that, firstly, the staff at the central offices is relieved of much detailed work, and, secondly, that the control of the localities is rendered much less bureaucratic.

2. **Early History of Local Government of Australia.**—Before the more comprehensive systems of self-government were first provided for in the several States, various enactments had from time to time been passed and amended in order to satisfy the growing demand for local government which asserted itself as one of the primary results of the spread of education and increase of population. In the latter part of the year 1839 the first municipal law was passed in South Australia, which was thus the birthplace of local government in the Commonwealth. On 31st October, 1840, the principles of self-government were practically adopted in Adelaide by the election of a mayor and council. In 1842 the Sydney City Incorporation Act was passed by the New South Wales Government; under this Act the city was divided into six wards, and resident occupiers or owners of houses, warehouses, or shops within a radius of seven miles were duly enrolled as citizens and entitled to vote at the elections of councillors, the number of which was fixed at twenty-four. A city fund was established and rates levied. The duties of the council were to construct and maintain streets, sewers, and waterworks, to light the streets, and to make by-laws for the general good rule and government of the city. In the same year, 1842, Melbourne was incorporated as a town by special Act, and as a city in 1847, while Geelong was incorporated in 1849. The Acts by which Sydney and Melbourne were incorporated contained no provision for the extension of the municipal principle to other localities, but in 1842 an Imperial Act was passed under which the Governor of New South Wales was empowered to incorporate by Letters Patent every county or any part of a county to form districts for the purpose of local government. In the following year the districts of Appin, Campbelltown, Camden, Narellan, and Picton, in New South Wales, were incorporated under one county district council, while later in the same year Appin and Campbelltown were constituted as a separate district under the control of six councillors. In 1844 the Sydney City Incorporation Act was amended; by this time the number of county district councils had increased to eight, and these, in conjunction with the municipal council of Sydney and the Road Trusts, which were generally created by special Acts, constituted the whole of the local government system in New South Wales prior to 1858. The Imperial Act of 1850, under which the State of Victoria was granted responsible government, provided

for the division of the State into districts under the government of local councils. In all the States of the Commonwealth, systems of local government have been provided for; in some of the States, such as Victoria, practically the whole area of the State has for some years been divided into districts for the purposes of self-government, while in others, more especially in New South Wales, a general system of extending the advantages of local government throughout the more settled parts of the country has only recently been provided. In other States, systems of local government which have been in force for some years have, as is only to be expected, made comparatively slow progress owing to the small population scattered over such large areas. Taking, however, into consideration the benefits which must accrue, especially in a country of great distances, from the establishment of suitable systems of local government, and judging by the success of similar institutions in other countries, there is every reason to expect that, as population increases and settlement progresses, the people of Australia will take fuller advantage of the systems provided.

§ 2. New South Wales.

1. **Development of Local Government Systems.**—In the year 1858 the Municipalities Act, the first important measure with regard to general local government in New South Wales, was passed. Under this Act provision was made for the incorporation of any town or rural district as a municipality upon presentation to the Governor of a petition signed by at least fifty of the respective ratepayers, and containing a larger number of signatures than those attached to any counter petition. The members of the council were elected by the ratepayers, and the chairman was chosen by the councillors from their own number. The duties of the council were to abate and remove nuisances; to make by-laws for the regulation of their own proceedings and for the general good government of the town; to control all roads, bridges, ferries, and wharves; to establish hospitals, asylums, libraries, and gardens; and to establish tolls and rents for the use of markets, bridges, wharves, and jetties within and belonging to the municipality. The general rate was not to exceed one shilling in the pound, but a special rate for water supply, sewerage, and street lighting could be levied. Government endowment was provided for, by way of subsidies on the amount collected from rates, over a period of fifteen years. In all thirty-five districts were incorporated under this Act, and these districts, with the exception of Cook, which was united to Camperdown (now part of the City of Sydney) in 1870, and East St. Leonards, subsequently joined to St. Leonards, still exist, though the boundaries of most of them have since been changed.

(i.) *The Municipalities Act 1867.* The Act of 1858 was repealed in 1867 by the Municipalities Act of that year. Under the provisions of the latter Act the thirty-five existing municipalities were to continue their existence under the designation of boroughs, and all municipalities created in the future were to be classified either as (*a*) boroughs, or (*b*) municipal districts.

(*a*) *Boroughs* could consist of any city, town, or suburb of the metropolis, or of any populous country district, but every borough had to have a population of not less than 1000 and had to contain an area of not more than nine square miles, of which no part was more than six miles distant from any other part.

(*b*) *Municipal Districts* could comprise any part of the colony not containing a borough, but had to include an area of not more than fifty square miles, with a population of not less than 500 souls.

The duties and powers of the councils were extended and defined, while the maximum rate remained as before. This Act still left it optional for any district to become constituted as a municipality, with the consequence that only a small proportion of the State was incorporated under its provisions.

(ii.) *Division of the State into Shires, 1905.* The Act of 1867 was amended from time to time during the succeeding thirty years until the whole of the Acts—sixteen in number—were repealed by the consolidating Act of 1897. This Act did not alter the chief features of previous Acts, and still retained the voluntary principle of incorporation, which was not conducive to the adoption of a general system of local government, because so long as the central Government continued to construct and pay for local works, it was natural that the inhabitants benefited would be willing to deny themselves the advantages of self-government. The law on the subject remained in an admittedly unsatisfactory condition for several years, and, though various measures were introduced into Parliament for its amendment, it was not until the year 1905, when the Shires Act was passed, that a comprehensive scheme of local government was extended to the greater part of the State.

(*a*) *The Shires Act 1905* divides the whole State, with the exception of existing municipalities, the western division, Lord Howe Island, the islands in Port Jackson, and the Quarantine Station of Port Jackson, into shires, which were themselves subdivided into ridings, each riding having equal representation in the council, and were classified according to their extent and probable revenue and expenditure. An important feature of the Act was that the rates were to be charged on the unimproved value of the land, instead of on the annual rental; the rate to be levied was not to be less than one penny, nor more than twopence in the pound, and the minimum rate in respect of any portion of land was fixed at two shillings and sixpence. Another important provision of the Act was that as soon as a rate was imposed by a council, the operation of the Land Tax Act was suspended. The councils were vested with wide general powers and could acquire additional powers by resolution of a majority of the council followed by an application by the President on behalf of the council to the Governor.

(*b*) *The Local Government Extension Act 1906* amended and consolidated the law relating to municipalities and extended the principles of the Shires Act to municipalities. Provision was also made whereby the Governor was authorised to proclaim as a city any municipality which had, during the previous five years, a population of at least 20,000 persons and a revenue of at least £20,000, and which formed an independent centre of population.

(*c*) *The Local Government Act 1906.* Towards the close of the year 1906 the Local Government Act, which deals comprehensively with both shires and municipalities, was passed; by this Act, which was amended in 1908, both the Shires Act 1905 and the Local Government Extension Act 1906 are repealed, and their provisions are amended and consolidated.

(*d*) *The Local Government (Loans) Act 1907.* In 1907 the Local Government (Loans) Act was passed in order to overcome certain difficulties at the inception of the new system, authorising the Governor to approve of municipal loans in special cases, without going through the procedure required by the Local Government Act.

(*e*) *The Local Government (Amending) Act 1908.* This Act was passed in December, 1908, and contains important amendments, more especially in regard to the constitution of areas, functions of councils, values and valuations, and rates.

2. **Local Government Systems now in Operation.**—The law relating to local government in New South Wales is now contained in the Acts of 1906, 1907, and 1908 referred to above. Practically the whole of the State, with the exception of the Western Division, has now been brought under the operation of these Acts.

(i.) *Areas Incorporated.* Prior to the year 1907 the total area incorporated formed a very small part of the whole area of the State, as may be seen in the following statement:—

AREAS INCORPORATED IN NEW SOUTH WALES, 1860 to 1906.

Year	1860.	1870.	1880.	1890.	1900.	1906.
Area incorporated—Sq. miles ...	409	649	1,482	2,387	2,763	2,830

Total area of State (exclusive of Lord Howe Island), 310,367 *square miles.*

The areas incorporated in 1906 in each of the three territorial divisions of the State were as follows:—

DISTRIBUTION OF INCORPORATED AREAS, 1906.

Division.	Incorporated Area.	Unincorporated Area.	Total Area.
Eastern ... ... Sq. miles	1,977	93,742	95,719
Central ... ... „	571	88,579	89,150
Western ... ... „	282	125,216	125,498
Total	2,830	307,537	*310,367

* Total area of State, exclusive of Lord Howe Island, the area of which is 5 square miles.

The total area incorporated under the Local Government Act 1906, to the end of the year 1909, was 185,108 square miles, of which 182,111 square miles were comprised within shires and 2997 within municipalities. The areas incorporated comprise the whole of the eastern and central divisions of the State, with the exception of Lord Howe Island, the islands in Port Jackson, and the quarantine station at Port Jackson.

(ii.) *General.* The above Act came into operation on the 1st January, 1907; it provided for the continuation of existing shires and municipalities, for the creation of new ones, and for their reconstitution by uniting, dividing, altering, or converting areas. Each shire is divided into three ridings, and each municipality may be divided into wards by petition of the council or a majority of the ratepayers to the Governor. The councils consist, in the case of shires, of either six or nine councillors, and in the case of municipalities, of from six to twelve aldermen, except in the case of the union of two or more municipalities, when the Governor may determine that the council of the united areas shall consist of any number from twelve to eighteen aldermen. All occupiers of ratable property of a yearly value of at least £5 who have been in occupation for at least three months, of either sex, who are either natural-born or naturalised British subjects, of the age of twenty-one years and upwards, are entitled to be registered on the electors' roll, and any male person so enrolled is qualified to be elected as a councillor or alderman, unless he is otherwise ineligible.

(iii.) *Functions of Councils.* The general scheme of the Act was that councils, on their constitution, should start with a limited number of powers of a primary nature, and that, as their needs develop, they should from time to time acquire additional powers on following the prescribed procedure. On the constitution of a shire or municipality the councils may exercise any of the following powers:—The construction and maintenance of all public places, except those vested in the Railway Commissioners or other public bodies or trustees, and except national works; lighting of, and controlling the traffic in streets and roads; prevention of fires and floods; the administration of the Public Watering Places Act 1900 and the Impounding Act 1898, and certain parts of the Police Offences Act 1901, the Public Health Act 1902, and the Cattle Slaughtering and Diseased Animals

and Meat Act 1902. Other powers and duties, such as the construction of drainage and water supply systems without reticulation, the care and management of parks and commons, and the licensing of hawkers and public vehicles, are conferred and imposed upon municipal councils, while these same powers and duties may be acquired by shire councils by resolution of the council followed by application to the Governor.

(*a*) *Acquisition of Further Powers.* Further powers may also be acquired either by shires or by municipalities if the council decide that they are necessary for the good government of the locality; these are the administration of the Public Gates Act 1901, and the Native Dog Destruction Act 1901; water supply by reticulation; the maintenance of passenger ferries, of fire brigades, of municipal buildings, of cattle-yards and abattoirs, of markets, parks, and recreation grounds, of refuse destructors, of cemeteries and public baths; the manufacture and supply of gas, electricity, and hydraulic or other power; the regulation and control of theatres, public halls, and lodging houses; the establishment and management of public libraries, art galleries, museums, and public bands; the regulation and supervision of buildings and balconies; of the sale of fish and meat, and the suppression of nuisances caused by the emission of smoke or vapour. These powers may be acquired by a resolution passed by an absolute majority of the council followed by an application in the prescribed form to the Governor. On receipt of a petition signed by not less than fifty, or if there be less than 300 ratepayers on the roll, by one-sixth of the ratepayers, the Governor may direct that a poll be taken as to whether all or any of the powers applied for shall be conferred on the council.

(*b*) *Appointment of Executive Officers.* Provision is made in the Act for the appointment of officers and servants, such as shire engineers, municipal clerks, and sanitary inspectors, and also for the acquisition by councils of land or buildings either by agreement or compulsorily, for which purpose the provisions of the Public Works Act 1900 are incorporated.

(iv.) *Rates and Ratable Property.* All land is ratable except the following:—Commons, public parks, and public reserves not held under lease or license; cemeteries, public hospitals, benevolent institutions, and buildings used exclusively for public charitable purposes; churches and free public libraries; unoccupied Crown lands; lands vested in the University of Sydney occupied and used solely for the purposes of education; and vested in the Chief Commissioner for Railways and Tramways and actually used for the purposes of the Government railways or tramways. Rates levied by a council may be of four kinds, namely, general, special, local, or loan rates.

(*a*) *General Rates* are levied on the unimproved value at a rate of not less than one penny nor more than twopence per pound, but if the minimum rate be more than sufficient to meet the requirements of the council, it may be further reduced at the discretion of the Governor. A council of a municipality which has levied a general rate of not less than one penny on the unimproved value may impose such additional rate as may be required either on the improved or the unimproved value; the total amount to be derived from the general rate and the additional general rate taken together must not, however, exceed the amount yielded by a rate of 2d. in the £ on the unimproved value and 1s. 6d. in the £ on the assessed annual value of all ratable land.

(*b*) *Special, Local, and Loan Rates* may also be imposed either on the improved or the unimproved value at the option of the council, but in the case of special and local rates a poll may be demanded by the ratepayers as to whether the rate shall be imposed or not. Rates on the unimproved value

of land may also be levied for the purposes of the Country Towns Water Supply and Sewerage Acts 1880-1905, which provide for the construction by the Government of waterworks and sewerage systems in municipalities which are outside the areas served by the Metropolitan and Hunter River Boards. The cost becomes a charge against the municipality, carrying interest at a rate of 4 per cent., and payable by annual instalments over a period of not more than 100 years.

Particulars of rates levied are given in paragraphs 3 and 4 hereinafter.

(v.) *Endowment.* Government endowments to shires are fixed every third year and the amount is determined according to the extent of the shire, the probable revenue from a rate of 1d. in the £, the necessary expenditure, the extent of roads and other public works to be constructed and maintained, and other matters. The endowment in any year is paid on the basis of the amount of general rates collected in the preceding year. At the end of 1909 the endowments to be paid during the triennium 1910-12 were fixed. The classification for the period mentioned is as follows:—

NEW SOUTH WALES—ENDOWMENT OF SHIRES, CLASSIFICATION, 1910-12.

Class.	1st.*	1st.	2nd.	3rd.	4th.	5th.	6th.
No. of Shires	27	41	10	9	7	14	26
Endowment received in the £ on general rate ... ... Up to	*	10s.	15s.	20s.	25s.	30s.	†

* No endowment. † Not less than 40s. in the £ on the general rate.

It is also provided that all municipalities not receiving statutory endowment under any Act repealed by the Act of 1906 shall, upon the result of investigations made into their administration and financial necessities, be entitled to a sum not exceeding three shillings and fourpence in the pound on the general rate collected; but if the revenues are sufficient to meet the reasonable requirements of the corporations under proper management no endowment will be paid.

(vi.) *Borrowing Powers and other Provisions.* A council of a municipality is authorised to borrow up to 10 per cent. of the unimproved capital value, and all money so borrowed is a charge upon the revenue of the council. If a council desire that any proposed loan should be guaranteed by the Government application must be made to the Treasurer, who may either refuse or recommend the guarantee. Both shires and municipalities may temporarily borrow in any year an amount not exceeding one-third of the estimated revenue to be received from rates if the consent of the Minister shall have been first obtained. Auditors are appointed by the councils, and Government examiners are appointed to inspect the accounts of the councils. A defaulting area is defined to be an area in which a sufficient number of councillors have not been elected to form a quorum, or in which the requirements of the Act as to the levying of a general rate have not been carried out, or in which the council has ceased for six months to exercise its functions. The Governor is authorised to appoint an administrator for a defaulting area.

3. **Shires, 1909.**—The total area of the 134 shires constituted under the new system is 182,111 square miles, and the approximate population at the end of the year 1909 was 564,660.

The shires vary in area from 36 square miles in the case of Ku-ring-gai, immediately north of the metropolis, to 5745 square miles in the case of Lachlan in the Condobolin district.

(i.) *Valuation and Rates Levied.* The unimproved capital value of the shires in 1909 was £83,464,446, as against £82,414,771 in the preceding year. It is not possible to

give the improved capital value or the assessed annual value, as the shires are not compelled to make these valuations, and in many cases do not make them. The total amount of all rates levied was £374,206.

(ii.) *Revenue.* The principal heads of revenue for the three years since the new Act came into force are shewn in the following table :—

NEW SOUTH WALES.—INCOME OF SHIRES, 1907 to 1909.

Particulars.	1907.	1908.	1909.
General Fund—	£	£	£
General rates	287,635	382,336	374,540
Government endowment	235,794	162,859	261,029
Public works	3,064	65,781	57,017
Health administration	2,376	2,979	3,033
Public services	4,593	7,038	6,691
Shire property	...	517	1,721
Miscellaneous	2,197	4,198	5,651
Special and Local Funds	...	1,160	7,462
Total revenue	535,659	626,868	717,144

(iii.) *Expenditure.* The following statement shews the expenditure of shires during the years 1907 to 1909 inclusive :—

NEW SOUTH WALES.—EXPENDITURE OF SHIRES, 1907 to 1909.

Particulars.	1907.	1908.	1909.
General Fund—	£	£	£
Administrative expenses	100,435	116,932	117,696
Public works	249,868	516,072	529,954
Health administration	1,536	4,604	4,573
Public services	3,870	11,702	10,290
Shire property	18,853	397	1,911
Miscellaneous	11,043	6,453	5,886
Special and Local Funds	...	58	6,474
Total expenditure	385,605	656,218	676,784

(iv.) *Assets and Liabilities.* The financial position of the shires at the end of the year 1909 was strong, as there was an excess of assets of £232,107. The following table gives particulars of assets and liabilities as at the 31st December, 1909 :—

NEW SOUTH WALES.—ASSETS AND LIABILITIES OF SHIRES, 1909.

Assets.		Liabilities.	
Outstanding rates	£24,581	Temporary loans	£7,414
Stores and materials	8,384	Sundry creditors	10,508
Bank balance	148,839	Due on contracts	2,972
Sundry debtors	2,775	Due to trust fund	254
Land	5,799	Other	83
Buildings	20,289		
Plant and property	29,402	Total	21,231
Furniture	11,779	Excess of assets	232,107
Other	1,490		
Total	253,338	Total	253,338

4. **Municipalities.**—Including the City of Sydney there are 190 municipalities in New South Wales; of these forty are in the suburbs of Sydney and twelve in the district of Newcastle and suburbs. Since the 1st January, 1908, under the Local Government Act 1906, municipalities must levy a general rate on the unimproved capital value of all ratable land, and may levy additional general, special, local, or loan rates on either the unimproved or improved capital value. Municipal rates are therefore no longer charged on the annual value; the only rates based on that value are those charged by the Metropolitan and Hunter River Water Supply and Sewerage Boards.

(i.) *Capital Value, Area, Population, and Rates Levied, 1901 to 1909.* The following table shews the improved capital value, the area, population, number of buildings, and amount of rates levied in municipalities for each year from 1901 to 1909 inclusive:—

NEW SOUTH WALES.—MUNICIPALITIES, IMPROVED CAPITAL VALUE, AREA, POPULATION, NUMBER OF BUILDINGS, AND TOTAL RATES LEVIED, 1901 to 1909.

Year ended February.*	Sydney and Suburbs.					Country.				
	Improved Capital Value.	Area.	Population.	Number of Buildings.	Total Rates Levied.	Improved Capital Value.	Area.	Population.	Number of Buildings.	Total Rates Levied.
	£	Acres.	No.	No.	£	£	Acres.	No.	No.	£
1901 ...	88,118,600	91,220	†487,900	†94,907	277,457	36,429,600	1,732,302	371,330	73,862	127,564
1902 ...	90,060,600	‡	†487,900	†94,907	333,065	37,936,300	†1,711,312	†372,218	74,012	131,570
1903 ...	93,413,300	‡	516,180	99,125	377,016	36,606,500	1,711,312	379,430	79,141	174,900
1904 ...	96,171,600	‡	514,750	102,061	382,509	38,046,700	1,719,612	386,610	79,712	178,249
1905 ...	98,857,900	‡	512,500	105,336	396,268	38,355,800	1,719,612	391,370	81,506	188,929
1906 ...	101,090,900	‡	523,590	107,922	404,332	39,223,700	1,719,692	396,820	83,075	191,480
1907 ...	102,037,900	‡	550,760	110,430	412,093	39,417,000	1,719,692	401,140	84,094	194,754
1908 ...	103,328,200	95,259	577,180	117,955	426,792	41,668,300	1,824,638	433,470	83,511	208,631
1908§	105,641,359	95,259	592,100	‖120,655	527,926	44,659,776	1,822,821	444,800	‖84,150	286,329
1909 ...	108,120,427	95,319	605,900	123,860	631,589	44,716,888	1,822,821	456,280	85,341	299,306

* See footnote to first table in preceding paragraph. † Census, March, 1901. ‡ Not available
§ Under the Local Government Act 1906, the Municipal year now closes on the 31st December.
‖ Number of dwellings.

The following table gives a comparison of the unimproved and improved values for the years 1907 to 1909 inclusive :—

NEW SOUTH WALES.—MUNICIPALITIES, IMPROVED AND UNIMPROVED CAPITAL VALUES, 1907 to 1909.

Particulars.	Unimproved Value.			Improved Value.		
	1907.	1908.	1909.	1907.	1908.	1909.
	£	£	£	£	£	£
Sydney—City	20,207,812	20,207,812	19,970,365	45,749,800	49,060,600	50,948,240
Suburbs	19,583,598	23,799,856	23,486,535	57,578,400	56,441,828	57,172,187
Metropolis	39,791,410	44,007,668	43,456,900	103,328,200	105,502,428	108,120,427
Country	14,875,612	20,104,983	19,798,286	41,668,300	44,784,238	44,716,888
Total	54,667,022	64,112,651	63,255,186	144,996,500	150,286,666	152,837,315

(ii.) *Revenue.* The Local Government Act 1906 prescribed that there should be a general fund in each local government area (municipality and shire), and also special funds for specified purposes. The regulations under the Act prescribed the system of accounts to be kept. This system differs materially from the old "cash" system of receipts (cash actually received) and disbursements (cash actually expended), and the financial results for 1908 and 1909 cannot be compared directly with those for previous years.

Prior to 1908 the municipal year ended on the first Monday in February; now it ends on the 31st December. In all statements of municipal accounts for the year 1908, therefore, the period referred to is from the 4th February to the 31st December, except in the City of Sydney, which does not come under the provisions of the Act of 1906 and where the accounts are kept for the calendar year. The only complete year for which financial particulars are available for the municipalities is, therefore, the year 1909. Particulars of revenue for that year are given in the following table:—

NEW SOUTH WALES—MUNICIPALITIES, REVENUE, 1909.

Particulars.	Sydney.	Suburbs.	Country.	Total.
	£	£	£	£
General fund	546,203†	413,220	297,710	710,930‡
Trading accounts		6,076	77,069	83,145‡
Special and local funds		21,168	176,704	197,872‡
Loan funds		46,220	66,262	112,482‡
Gross revenue	546,203†	486,684	617,745	1,650,632
Deduct transfers*	...	49,893	98,043	147,936
Net revenue	546,203†	436,791	519,702	1,502,696

* Transfers from various funds to loan funds for principal, interest, and capital expenditure. † The city of Sydney accounts are kept on a cash basis, *i.e.*, they shew actual receipts snd disbursements; the accounts of municipalities operating under the Local Government Act shew total revenue and expenditure for the year. Items of receipts and disbursements for the city of Sydney cannot be allocated to the different headings shewn for municipalities. ‡ Exclusive of Sydney.

(iii.) *Expenditure.* Reference has already been made to the system of accounts prescribed by the Local Government Act 1906 (see paragraph ii. hereof). The following table gives particulars of expenditure of municipalities for the year 1909:—

NEW SOUTH WALES.—MUNICIPALITIES, EXPENDITURE, 1909.

Particulars.	Sydney.	Suburbs.	Country.	Total.
	£	£	£	£
General fund	495,227†	416,211	311,426	727,637‡
Trading accounts		6,327	72,201	138,528‡
Special and local funds		17,896	137,994	155,890‡
Loan funds		35,999	31,486	67,485‡
Gross expenditure	495,227†	476,433	553,107	1,524,767
Deduct transfers*	...	49,893	98,043	147,936
Net expenditure	495,227†	426,540	455,064	1,376,831

* Transfers from various funds for principal and interest on loans. † See note † to preceding table. ‡ See note ‡ to preceding table.

(iv.) *Assets and Liabilities.* The financial position of the municipalities as at the 31st December, 1909, is shewn by the following statement of assets and liabilities of the various funds :—

NEW SOUTH WALES.—MUNICIPALITIES, ASSETS AND LIABILITIES, 1909.

Particulars.	Sydney.	Suburbs.	Country.	Total.
Assets—	£	£	£	£
General fund	3,677,159†	226,053	414,635	840,688‡
Trading accounts		1,343	38,279	39,622‡
Special and local funds... ...		7,367	897,941	905,308‡
Loan funds		156,158	446,273	602,431‡
Total	3,677,159†	390,921	1,797,128	5,865,208
Liabilities—				
General fund	2,994,579†	43,127	57,374	100,501‡
Trading accounts		1,826	10,613	12,439‡
Special and local funds... ...		1,710	830,011	831,721‡
Loan funds		778,430	624,564	1,402,994‡
Total	2,994,579†	825,093	1,522,562	5,342,234

† See note † to first table on preceding page. ‡ See note ‡ to first table on preceding page.

5. **Sydney Metropolitan Board of Water Supply and Sewerage.**—Prior to the year 1888 the main water supply and sewerage systems of Sydney and suburbs were under the control of the City Corporation, while several of the suburban councils had constructed local systems. For some years, however, it had been recognised that owing to the great increase in the population and size of the metropolitan area the water supply was inadequate and the sewerage system antiquated and inefficient. In 1867 a Royal Commission was appointed to enquire into and report upon various schemes for supplying water to the city and suburbs, and in 1869 a report was sent in recommending the adoption of what is known as the "Upper Nepean Scheme." Another commission was appointed in 1875 to investigate different proposed sewerage systems, and two years later a report was presented containing certain recommendations which form the basis of the present system. After considerable discussion and further investigation an Act was passed in 1880 authorising the schemes recommended by the two commissions being carried out. In the year 1888 the works had so far progressed that the Government, with the object of placing the administration of both water supply and sewerage systems throughout the county of Cumberland under the control of an independent body, passed an Act authorising the establishment of the Metropolitan Board of Water Supply and Sewerage. This Board consists of seven members, three of whom are appointed by the Government, two by the City Council, and two by the suburban and country municipalities in the county of Cumberland. The Board is under the general supervision of the Minister for Works—a provision considered necessary since the loan expenditure of the Board forms part of the public debt of the State.

6. **Metropolitan Water Supply.**—In the year 1850 authority was given by the Legislative Council to the City Corporation to construct water and sewerage works. Under this authority a water supply scheme was adopted and carried out, at a cost of nearly £1,750,000, by which the waters of the streams draining into Botany Bay were intercepted and pumped into three reservoirs. This system has now been superseded by the " Upper

Nepean Scheme" referred to above, the management of which was transferred to the Metropolitan Board of Water Supply and Sewerage in May, 1888.

(i.) *The Cataract and Prospect Dams.* A work of great importance and magnitude in connection with the Sydney water supply—the Cataract Dam—was completed in 1908. Prior to the construction of this dam, the system had been weak in the matter of storage, the only reservoir of any importance being that at Prospect, which was formed by the construction of an earthen dam completed in 1890, and which contains a supply available by gravitation of 5,446,000,000 gallons of water. The Prospect reservoir is supplied from the unstored waters of the Nepean, Cataract, and Cordeaux rivers by means of tunnels and conduits capable of carrying 150,000,000 gallons a day; the combined catchment area of the three rivers extends to an area of 354 square miles, and is favourably situated with regard to the coastal rainfall. The whole of this area has been acquired by the Crown, and every precaution is exercised to guard against pollution of the supply. It was found, however, in 1902—almost the driest year on record—that the Prospect reservoir was insufficient for the needs of the increasing population of Sydney and suburbs during a dry period. The Government, therefore, decided to construct additional reservoirs on the rivers forming the sources of supply, in which would be stored as much of the flood water from the available catchment area of 354 square miles as would be necessary to meet the constantly increasing requirements of the metropolis.

The first of this series of reservoirs is the Cataract dam, of which the catchment area above the impounding dam is about fifty-eight square miles. The water released from this reservoir flows down the bed of the Cataract River to a diversion weir at Broughton's Pass, where it enters the previously existing tunnel, and is conveyed thence by a system of open canals to the Prospect reservoir. In traversing the steep and rocky bed of Cataract River the water is thoroughly aerated. The total distance travelled by the water from Cataract to Sydney *via* Prospect is 66½ miles, of which 21½ miles represents the distance from Prospect to Sydney.

The principal dimensions of the Cataract and Prospect dams are given below:—

SYDNEY WATER SUPPLY—CATARACT AND PROSPECT DAMS.

Dam.	Height above Foundation.	Width at Top.	Thickness at Bottom.	Length.	Area of Reservoir	Capacity of Reservoir.
	Feet.	Feet.	Feet.	Feet	Acres.	Gallons.
Cataract ...	192	16½	150	811	2,400	21,411,000,000
Prospect ...	85½	30	523	7,300	1,266½	11,029,200,000*

* Of which 5,527,000,000 gallons are available by gravitation.

The present population of Sydney and suburbs supplied with water from these works is estimated at 668,940. The winter consumption of water ranges from twenty to twenty-two million gallons a day, while the summer consumption and evaporation together approximate to thirty million gallons a day. As the combined available capacity of the Cataract and Prospect reservoirs amounts to nearly 32,500,000,000 gallons, the storage available represents a supply for about 1000 days without rainfall.

(ii.) *Aqueducts and Mains.* The water is drawn off from the Prospect reservoir through a valve tower by cast-iron pipes and thence proceeds by canal, five miles in length, to the Pipe Head Basin, situated 16½ miles from Sydney. It is then conveyed for a further distance of five miles by two wrought-iron pipes, each six feet in diameter, to Potts' Hill reservoir, which has a capacity of 100,000,000 gallons, covers twenty-four and a half acres, and is designed to tide the city over any interruption of supply from Prospect, and to prevent fluctuation of pressure. A by-pass is laid along the floor of the reservoir to enable both six-feet mains to deliver water to Sydney direct. At Potts' Hill

the water passes through a screening tank constructed of copper-gauze screens, and thence proceeds towards the city in two 48-inch cast-iron mains. The first laid main is 48-inch as far as Petersham, whence it bifurcates, one branch (48-inch) leading to Petersham reservoir, the other (42-inch) to Crown Street reservoir, where the main pumping station is situated. The duplicate 48-inch main, completed in 1893, continues of the same diameter direct to Crown Street. The main pumping plant consists of three pairs of compound high-duty pumping engines and one electrically-driven centrifugal pumping unit. The first set is capable of raising 400,000 gallons per hour to the Centennial Park reservoir, a height of 104 feet above the pumps, at which place a new covered reservoir, of a capacity of 17,000,000 gallons, has been constructed for the purpose of ensuring a larger bulk of water within the city limits; the second set is capable of raising 210,000 gallons per hour to the Woollahra reservoir, a height of 140 feet, and also of raising 200,000 gallons per hour to Waverley, a height of 220 feet above the pumps; while the third set is capable of raising 100,000 gallons per hour to the Waverley tanks. The centrifugal plant raises 7000 and 4800 gallons per minute to Waverley and Woollahra respectively.

(iii.) *Northern Sydney.* A pumping station at Ryde has been erected for the supply of the suburbs on the north side of the harbour. The station receives its supply through a 32-inch steel main from the Pipe Head Basin, discharging into a reservoir, from which the water is pumped to a 1,000,000-gallon tank at Ryde, 234 feet above high-water mark, and by a continuation of the same main into two other tanks at Chatswood, at an elevation of 370 feet above high-water mark, and having a joint capacity of 3,000,000 gallons. Water is also pumped at this station direct to Pymble at 567 feet elevation and to Wabroongah at 717 feet. A 9-inch main extends over the Gladesville and Iron Cove bridges to supply the heights of Balmain, but is now being superseded by an 18-inch main.

(iv.) *Storage Reservoirs.* In connection with the water supply there are in all thirty-two service reservoirs, with a total maximum capacity of 51,716,000 gallons.

(v.) *Revenue, Expenditure, and Capital Cost of Sydney Waterworks.* The following table gives particulars as to the revenue, expenditure, and capital cost of the metropolitan waterworks for each financial year from 1901 to 1910:—

SYDNEY WATERWORKS—REVENUE, EXPENDITURE, AND CAPITAL COST, 1901 to 1910.

Year Ended 30th June.	Revenue.	Working Expenses.	Capital Cost exclusive of Items on which Interest is not charged.	Percentage of Working Expenses to Revenue.	Percentage of Revenue to Capital Cost.	Interest Payable on Capital Cost.	Net Profit after paying Working Expenses and Interest.
	£	£	£	%	%	£	£
1901	203,348	49,270	4,300,552	24.22	4.72	152,333	1,745
1902	223,201	57,360	4,423,203	25.69	5.04	162,262	3,579
1903	220,745	71,139	4,489,560	22.22	4.91	159,773	—10,167*
1904	222,827	58,929	4,544,656	26.44	4.90	163,314	584
1905	251,503	66,015	4,434,991	26.24	5.67	156,372	29,116
1906	270,263	64,487	4,674,341	23.86	5.78	164,216	41,560
1907	275,591†	67,593	4,902,463	24.52	5.62	176,170	31,828
1908	283,410	75,016	5,009,012	26.47	5.66	183,033	25.361
1909	267,519‡	80,282	5,146,303	30.01	5.19	185,591	1,646
1910	284,943§	93,027	5,286,917	32.64	5.38	184,486	7,430

* Represents a loss. † Rate reduced from 8d. to 7d. from 1st January, 1907. ‡ Rate reduced from 7d. to 6d. from 1st July, 1908, and water-meter rents abolished. § Meter rentals reimposed from 1st July, 1909, and meterage charge reduced from 1s. to 11d. per 1000 gallons.

(vi.) *Quantity of Water, Number of Houses, and Population Supplied, 1901 to 1910.* The following table gives various particulars shewing the increase in the supply of water in Sydney and suburbs from 1901 to 1910:—

SYDNEY WATERWORKS.—NUMBER OF GALLONS, HOUSES AND POPULATION SUPPLIED, 1901 to 1910.

Year Ended 30th June.	Number of Houses Supplied.	Estimated Population Supplied.	Average Daily Supply.	Total Supply for the Year.	Aver. Daily Supply.		Mains Laid.
					Per House.	Per Head of Estimated Population	
	No.	No.	1000 Gallons.	1000 Gallons.	Gallons.	Gallons.	Miles.
1901	98,298	491,000	21,583	7,877,677	219	43.95	40
1902	101,966	509,000	21,906	7,995,822	205	43.03	44
1903	104,681	523,000	16,896	6,166,991	162	32.30	30
1904	109,191	546,000	18,690	6,840,549	171	34.23	14
1905	112,343	561,715	21,713	7,925,184	195	38.65	36
1906	116,202	581,010	22,393	8,173,555	192	38.54	60
1907	120,782	603,910	22,913	8,263,104	189	37.92	56
1908	124,083	620,400	24,567	8,967,135	197	39.50	48
1909	128,444	642,220	25,911	9,457,660	201	40.34	71
1910	133,788	668,940	26,903	9,819,657	201	40.21	100

(vii.) *Other Water Supply Systems under the Metropolitan Board.* In addition to the main metropolitan water supply system there are certain other systems within the County of Cumberland managed by the Metropolitan Board. (*a*) The Richmond waterworks are entirely unconnected with the Sydney supply. The system consists of a small pumping station on the left bank of the Hawkesbury River, just below the confluence of the Grose and Nepean, a 6-inch supply main, four miles in length, and five and one-eighth miles of 3-inch and 4-inch reticulation mains. (*b*) The Wollongong waterworks are also unconnected with the Sydney supply. The source of supply is the Cordeaux River and the catchment area is 2400 acres in extent. The total capacity of the reservoir is 173,000,000 gallons and the total length of the main about nineteen miles, exclusive of the extension to Port Kembla and Unanderra. The town, of which the estimated population on 31st December, 1909, was 4400, is reticulated with 4-inch and 3-inch pipes. (*c*) The Manly waterworks are supplied by a special catchment area of about 1300 acres, and are also connected with the metropolitan system by a 10-inch main from Mosman, crossing Middle Harbour, with ball and socket pipes. There are two horizontal compound duplex pumps, each having a capacity of 1,000,000 gallons in seventeen hours. (*d*) The water-supply for the districts of Campbelltown, Camden and Narellan, and Liverpool is not drawn from the main Sydney supply through Potts' Hill, but is received by gravitation from the upper canal at Prospect.

7. **Metropolitan Sewerage System.**—The system which is now under the control of the Metropolitan Board of Water Supply and Sewerage comprises the old and new systems. The old system was initiated by the City Commissioners in 1853, and continued by their successors, the present City Council, since their incorporation in 1857. The old system was designed on the principles of what is known as the "combined system," and comprises four main outfalls, with subsidiary sewers along the principal streets; these, in turn, receive the reticulation sewers of the minor thoroughfares. The four main outfalls discharged directly into the harbour, and the consequent pollution of the water and menace to public health led to the appointment of a commission to enquire into the best means of diverting the sewage from the harbour, and of disposing of it when thus diverted. The new intercepting system is the outcome of the labours of that commission. At the time of the transfer, in 1889, of the original sewerage works to the Metropolitan Board there were 70¼ miles of old city sewers in existence. The new system adopted is on the lines of the partially "separate system," and intercepts all sewerage from the gravitation zone—*i.e.*, from above a contour line about forty feet above high-water mark; while the sewerage from the low level areas—*i.e.*, from below that contour line, is eventually pumped into the gravitation sewers. The system consists of three main outfalls, viz.:—(*a*) The northern outfall, discharging into the Pacific Ocean at Ben Buckler Point, near Bondi, and taking all sewage previously discharged into the harbour.

(*b*) The southern outfall, discharging into the sewage farm at Webb's Grant, and providing for the remainder of the city and southern suburbs. (*c*) The western outfall, discharging into the Rockdale end of the sewage farm and providing for the western suburbs.

Another branch outfall has been constructed at Coogee, which discharges into the ocean and serves the districts of Randwick, Kensington and Coogee. On the northern side of the city extensive works have been completed. Septic tanks, into which main sewers discharge, have been constructed at Long Bay (Middle Harbour), Chatswood, and near Balmoral beach. At Manly an ocean outfall has been provided for the main sewer, and in the borough of North Sydney septic tanks were built in 1899 to deal with the sewage, while at Middle Harbour, Mosman, and Manly ample provision has been made for the sanitation of the districts.

(i.) *Revenue, Expenditure, and Capital Cost of Sydney Sewerage Systems.* The following table gives particulars as to the revenue, expenditure, and capital cost of the metropolitan sewerage systems during each year from 1901 to 1910:—

SYDNEY SEWERAGE SYSTEMS.—REVENUE, EXPENDITURE, AND CAPITAL COST, 1901 to 1910.

Year ended the 30th June.	Revenue.	Working Expenses.	Capital Cost, exclusive of Items on which Interest is not Charged.	Percentage of Expenditure to Revenue.	Percentage of Revenue on Capital Cost.	Interest Payable on Capital Cost.	Profit or Loss after Payment of Working Expenses and Interest.
	£	£	£	%	%	£	£
1901	125,290	45,395	3,066,147	36.23	4.05	106,475	*—26,580
1902	135,441	45,884	3,182,302	33.87	4.25	111,035	*—21,478
1903	145,666	46,747	3,365,155	32.09	4.32	117,496	—18,577
1904	156,274	44,458	3,562,741	28.44	4.38	124,819	*—13,003
1905	213,937	54,313	3,774,264	25.38	5.66	134,563	25,061
1906	220,629	55,368	3,828,495	25.09	5.76	134,527	30,734
1907	217,864†	62,141	3,922,514	28.52	5.55	140,980	14,743
1908	216,258	64,020	4,053,591	29.60	5.33	148,142	4,096
1909	214,212‡	68,575	4,225,239	32.01	5.06	151,317	*— 5,680
1910	223,131	70,851	4,351,381	31.75	5.12	151,943	337

* Represents a loss. † Rate reduced from 11d. to 10d. from 1st January, 1907. ‡ Rate reduced from 10d. to 9½d. from 1st July, 1908.

(ii.) *Number of Houses Drained, Population, and Length of Sewers in Sydney Metropolitan Sewerage Systems.* The following table gives particulars as to the number of houses drained, the population, and the length of sewers within the Sydney metropolitan area for each year from 1901 to 1910:—

SYDNEY SEWERAGE SYSTEM.—NUMBER OF HOUSES DRAINED, POPULATION, AND LENGTH OF SEWERS, 1901 to 1910.

Year ended the 30th June.	Number of Houses Drained.	Estimated Population Served.	Total Length of Sewers.	Total Length of Storm-water Drains.	Ventilating Shafts Erected.	Sewers Ventilated.
	No.	No.	Miles.	Miles.	Feet.	Miles.
1901	75,416	370,000	515.62	25.68	194,667	450.0
1902	82,644	413,000	550.40	25.91	236,855	552.0
1903	78,620	400,000	588.38	27.37	239,767	595.0
1904	82,215	410,000	610.73	37.27	252,977	614.0
1905	85,958	430,000	630.42	38.76	256,535	621.7
1906	88,881	444,405	656.84	44.71	264,255	636.0
1907	91,940	456,670	684.38	44.82	281,885	654.0
1908	96,384	481,920	724.37	46.94	286,000	684.0
1909	99,442	497,210	760.16	47.30	299,910	714.0
1910	102,896	514,480	793.55	47.82	344,820	756.0

8. **The Hunter District Water Supply and Sewerage Board.**—The waterworks of the Lower Hunter were constructed by the Government under the provisions of the Country Towns Water Supply and Sewerage Act of 1880. In 1892 a special Act was passed establishing an independent Board to control the water-supply works. This Board consists of seven members, of whom three are nominated by the Governor, one elected by the Newcastle Municipal Council, two by the adjacent municipalities, and one by the municipalities of East and West Maitland and Morpeth. The following municipalities and incorporated areas are within the area of the Board's jurisdiction :—

Newcastle Division.—Adamstown, Argenton, Ash Island, Boolaroo, Carrington, Hamilton, Hexham, Holmesville, Lambton, Merewether, Minmi, Newcastle, Plattsburg, Wallsend, Waratah, and Wickham.

Maitland Division.—Abermain, Aberdare, Bolwarra, Cessnock, East Greta, Heddon Greta, Hinton, Homeville, Kurri Kurri, Lorn, East and West Maitland, Morpeth, Oakhampton, Pelaw Main, Rutherford, Stanford Merthyr, Telarah, and Weston.

(i.) *Description of Waterworks.* The water supply is pumped up from the Hunter River about a mile and a half from West Maitland, the engines being situated above flood level on a hill about forty-four chains from the river. At the pumping station there is a settling tank of 1,390,500 gallons capacity, six filter beds, a clear water tank holding 589,500 gallons, and a storage reservoir of 172,408,100 gallons capacity. The filtered water is pumped from the clear water tank into two summit reservoirs, one of which is connected by a 10-inch cast-iron main 4⅛ miles in length, and supplies East and West Maitland, Morpeth, and Maitland, while the other is fed by two rising mains, one riveted steel pipe 20¾ in. diameter, and a 15-inch cast-iron main, 5⅝ miles long, and supplies the other districts under the control of the Board. In seven of these districts reservoirs having a total capacity of nearly 4,000,000 gallons are supplied by gravitation. On the hill at Newcastle there is also a high-level iron tank with a capacity of 20,000 gallons, which is supplied by a small pumping engine on the roof of the Newcastle reservoir.

(ii.) *Water Supply, Capital Cost, Revenue, and Expenditure, 1901 to 1910.* By the Act of 1892 referred to above and an Amending Act of 1894 the capital debt of the Board was to be liquidated by annual instalments distributed over 100 years with interest at 3½ per cent. By a further amending Act of 1897 the repayment of expenditure on permanent works was abrogated, and the annual instalments were to be paid in liquidation of the cost of renewable works to be fixed by the Government from year to year. The capital debt of the Board to the Government at 30th June, 1910, was £128,654 in respect of sewerage, and £467,428 with regard to water supply. The capital expenditure in respect of water supply at the 30th June, 1910, was £467,425, and in respect of sewerage £128,655. In the subjoined table particulars are given as to the revenue and expenditure, and also as to the number of houses and population supplied for each financial year from 1901 to 1910, inclusive:—

PARTICULARS OF THE HUNTER DISTRICT WATER SUPPLY, 1901 to 1910.

Year ended 30th June.	Revenue.	Working Expenses (including Interest).	Houses Supplied.	Estimated Population Served.	Supply.	
					Daily Average.	Total.
	£	£	No.	No.	1000 Gallons.	1000 Gallons.
1901	27,405	30,948	9,086	45,400	1,005	366,889
1902	29,558	32,109	9,875	49,400	1,119	408,508
1903	31,102	32,217	10,522	52,600	1,113	406,172
1904	31,360	32,361	11,100	55,500	1,093	399,954
1905	34,486	33,714	12,167	60,800	1,266	461,936
1906	40,801	34,801	12,968	64,800	1,479	539,655
1907	41,776	38,886	13,569	67,845	1,479	539,965
1908	45,695	39,615	14,457	72,285	1,654	603,755
1909	43,395	41,184	15,679	78,395	1,766	644,689
1910	46,767	43,126*	16,446	82,230	1,650	602,497

* Exclusive of an instalment of £10,500 to the sinking fund for reconstruction of renewable works.

The average daily consumption of water for all purposes per inhabitant was 20.07 gallons during the year 1910, as against 22.53 gallons during the previous year.

(iii.) *Sewerage Supply Works.* Considerable progress has been made by the Department of Public Works with the construction of the sewerage works for Newcastle and suburbs. The scheme is designed on the separate system, and will deal with the sewage partly by gravitation and partly by pumping. The works within the first two completed sections were transferred to the Board in 1907, and those within the third section in March, 1910. Up to the 30th June, 1910, about 30 miles of sewers, connecting with 671 separate properties, were under the control of the Board. In the financial year 1909-10 the revenue was £6192 and the expenditure was £6117.

9. **Water Supply and Sewerage in Country Towns.**—With the object of assisting municipalities to construct systems of water supply and sewerage, the Country Towns Water Supply and Sewerage Act of 1880 was passed. Under this Act the amount for carrying out the works is advanced by the State, and the municipality has the option of undertaking the construction of the works, failing which the Government undertakes the duty. Municipalities which avail themselves of the provisions of the Act are empowered to levy a rate for each service not exceeding a maximum of 5 per cent. on the assessed value of land and tenements, in addition to the ordinary municipal rates. The original Act, as amended in 1894 and in 1905, provides that the sum advanced, with interest at 4 per cent. per annum, must be repaid by a maximum number of 100 yearly repayments, and also provides for the issue of licenses to workmen, for the recovery of rates and for making by-laws for the assessment of lands and other purposes.

(i.) *Waterworks.* Up to the 30th June, 1909, forty country municipalities had availed themselves of the privileges of the Act as regards waterworks, all of which at that date had been completed and handed over by the Government. The total amount expended on these works was £731,016, and the total of the sums payable annually for a period of 100 years was £26,850, including interest at the rate of 3½ per cent., the first repayments having become due at various dates ranging from the end of the year 1893 to the end of 1908. In the calculation of these repayments the interest on the expenditure has been added, and any payments by the councils, as well as sums remitted under the authority of the Act, have been deducted. A number of other municipalities have constructed works out of their own resources.

(ii.) *Sewerage Works.* Only eight municipal councils have taken advantage of the Act providing for the construction of sewerage works in country towns. On the 30th June, 1909, the capital debt of these systems was £51,445, the amount payable annually to the Government being £1911. Other sewerage systems are in existence in several places, but with few exceptions the operations have been on a small scale.

10. **Board of Fire Commissioners of New South Wales.**—Reference has been made in the section of this book dealing with the subject of Private Finance (see page 884) to the constitution of the Board of Fire Commissioners of New South Wales, which has now superseded the Metropolitan and all other Fire Brigade Boards in that State.

(i.) *Receipts and Disbursements of Metropolitan Board with Total Amounts at Risk, 1902 to 1909.* The subjoined table shews the actual receipts and disbursements of the Metropolitan Board, and also the total amounts of risks held by the insurance companies within the metropolitan area for each year from 1902 to 1909 inclusive:—

SYDNEY METROPOLITAN FIRE BRIGADES BOARD.—RECEIPTS AND DISBURSEMENTS, ALSO TOTAL AMOUNTS AT RISK, 1902 to 1909.

Year.	Receipts.					Disbursements.	Net Risks.
	From Government.	From Municipalities.	From Fire Insurance Companies.	From other Sources.	Total.		
	£	£	£	£	£	£	£
1902 ...	10,200	10,281	10,235	1,981	32,697	37,128	71,750,461
1903 ...	15,150	15,323	15,150	2,498	48,121	42,055	73,083,028
1904 ...	14,000	13,942	14,000	3,293	45,235	45,235	75,147,807
1905 ...	14,300	14,147	14,300	6,395	49,142	49,142	78,108,749
1906 ...	14,700	15,145	14,700	6,959	51,504	51,504	81,364,129
1907 ...	15,650	15,646	15,700	2,722	49,718	50,193	86,563,300
1908 ...	17,400	17,567	17,400	6,645	59,012	58,956	89,971,992
1909 ...	19,100	19,213	19,100	4,542	61,955	62,447	*

* Not available.

(ii.) *Country Fire Brigade Boards.* Forty-one country Boards were established under the Fire Brigades Act 1902. These Boards were entitled to receive subsidies from the Government. Owing to an ambiguous clause in the statute the insurance companies and municipalities did not always consider themselves called upon to contribute to the expense of maintenance of the brigades as defined by the Act. In addition to the Boards constituted under the Act there were a number of country fire brigades in existence, towards the support of which the several municipalities generally contribute. In many country districts volunteer fire brigades have been established for the purpose of dealing with bush fires.

11. **Sydney Harbour Trust.**—The establishment of this Trust was the direct outcome of the outbreak of bubonic plague in the port of Sydney in the early part of the year 1900. It was proved that this disease was due to the introduction of plague-stricken rats in vessels arriving from ports in which the disease had made its appearance. As a consequence the whole of the foreshores of the harbour, together with certain adjoining wharves, stores, dwelling houses, and other properties, were vested in a body of trustees. The Trust was established by an Act which came into force on the 11th February, 1901. Under this Act an independent body of three Commissioners was created for the purpose of administering the affairs of the harbour and of fostering its interests, each commissioner being entitled to hold office for seven years, subject to certain conditions. This Board of Commissioners is invested with the exclusive control of the port and shipping, lighthouses, beacons, buoys, wharves, and docks (with the exception of wharves and docks constructed on land which has been alienated from the Crown), in Sydney Harbour, and is empowered to levy certain tolls, dues, rates, rents, and charges, and to resume or purchase lands and buildings. Prior to the establishment of the Trust, the extensive foreshores of the port offered opportunities to private individuals of acquiring water frontages, which enabled them to participate in the revenue to be derived from the wharfage and tonnage rates as prescribed by the various Acts. This alienation of the water frontages was in return for comparatively small payments. In effect, this deprived the Crown of an annual revenue which, under other circumstances, might have been applied to the maintenance of the port. One of the greatest changes made by the Sydney Harbour Trust Act was the alteration of the basis upon which wharfage is charged, so that goods which do not use the wharf, but are lightered overside, are subject to wharfage. The Act embodied the wharfage schedule appended to the Wharfage and Tonnage Rates Act of 1880, by which the inward rates were fixed at one shilling and eightpence per ton, and the outward at tenpence; but it did not provide for any reduced

rate for transhipment goods arriving from oversea as had previously been allowed, although it gave the Commissioners power to make or to recommend certain exemptions and to increase the inward wharfage to three shillings per ton measurement, or to four shillings per ton dead-weight. During the year 1901 the Commissioners recommended the Government to increase the inward rates to two shillings and sixpence per ton and to abolish outward wharfage, and these recommendations were duly endorsed by the Executive Council. Liberal concessions were also made with regard to transhipment goods arriving from oversea. All goods produced or manufactured within the State of New South Wales were exempt from wharfage rates until the Sydney Harbour Rates Act 1904 was passed. Under this Act a schedule of wharfage charges was provided for, a small charge of fivepence per ton being imposed on all goods transhipped; important amendments were also made in the old tonnage rates charges (which had been in existence since 1880), with the result that many vessels which previously escaped payment have now to pay a fair charge for the use made of the wharfage accommodation provided by the Trust. Considerable improvements have been made by the Commissioners in the wharfage accommodation of the port and in the sanitary condition of the area vested in the Trust by the construction of new jetties, sheds, offices, and waiting rooms; by dredging and by preventing the pollution of the waters of the port; by opening up new roads; and by taking means to prevent rats and other vermin from finding a harbourage in the produce stores and in the vicinity of the wharves.

(i.) *Revenue, Expenditure, and Capital Cost.* The subjoined table gives particulars of the revenue and expenditure of the Trust, and also shews the total capital debt for properties, etc., vested in the Commissioners, the amount of interest payable on the debt, and the balance of revenue after deducting expenditure, interest, and the amount of the Commissioners' salaries:—

SYDNEY HARBOUR TRUST.—REVENUE, EXPENDITURE, CAPITAL DEBT, INTEREST, AND BALANCE, 1901 to 1910.

Year ended the 30th June—	Revenue.				Expenditure.	Total Capital Debt.†	Interest.‡	Balance.§
	Wharfage & Harbour Rates.	Tonn'ge Rates.	From Other Sources.	Total.				
	£	£	£	£	£	£	£	£
1901* ...	42,841	3,208	12,326	58,375	9,983	...	...	...
1902 ...	127,197	9,824	82,626	219,647	75,692	...	...	...
1903 ...	147,718	3,762	104,665	256,145	82,185	...	...	...
1904 ...	117,214	5,715	138,748	261,677	80.032	5,091,372	180,257	‖—2,612
1905 ...	111,891	7,076	134,614	253,581	73,845	5,112,194	182,962	‖—7,226
1906 ...	143,625	6,935	120,129	270,689	76,304	5,155,289	180,951	9,434
1907 ...	163,896	11,364	122,682	297,942	78,714	5,137,646	181,531	33,697
1908 ...	183,371	12,610	131,544	327,525	87,034	5,227,360	187,907	48,584
1909 ...	184,063	11,549	138,756	334,368	100,908	5,338,108	192,861	37,299
1910 ...	183,342	9,811	144,162	337,315	108,191	5,482,069	191,246	34,578

* For the period from 11th February to the 30th June, 1901. †Not determined until the year 1904. ‡ The amount of interest has been computed by taking the rate of interest on the total capital debt of the State. § In addition to expenditure and interest, Commissioners' salaries (amounting in 1909-10 to £3,300) have been deducted. ‖ Represents a loss.

The revenue for the year 1909-10 shews an increase of £2947 on that for the previous year, and is the highest attained since the formation of the Trust. The corresponding increase in expenditure was £7283, which was incurred chiefly on account of extra requirements for dredging, and repair and maintenance of properties.

(ii.) *Dredging and Towing.* The subjoined statement gives particulars of the dredging and towing done by the five dredges and the six tug boats owned by the Trust:—

SYDNEY HARBOUR TRUST.—PARTICULARS OF DREDGING AND TOWING, 1905 TO 1910.

Year.	Dredging.			Towing Dredged Material.		
	Tons Dredged.	Total Expenditure.	Expenditure per Ton.	Miles run Towing.	Total Expenditure in Towing.	Expenditure per Mile Towing.
	Tons.	£	Pence.	Miles.	£	Pence.
1905 ...	490,045	8,808	4.31	46,542	5,378	27.73
1906 ...	489,610	8,311	4.08	39,301	5,207	31.78
1907 ...	482,474	8,087	4.02	45,617	5,392	28.37
1908 ...	504,760	8,915	4.24	45,485	6,940	36.62
1909 ...	434,504	13,066	7.22	38,699	6,634	41.14
1910 ...	448,650	11,495	6.15	33,048	5,519	40.08

§ 3. Victoria.

1. **Development of Types of Local Authorities.**—In Victoria there are now two types of municipal institutions, (*a*) boroughs, including cities and towns, and (*b*) shires, and although they are now dealt with by the same Act, their origin was distinct, and in the early days of their development they were provided for by independent enactments. Melbourne and Geelong, the latter of which was for many years the second largest town in the State, having been incorporated under special statutes prior to the establishment of a general system of local government, are not subject to the provisions of the Local Government Acts except in a few comparatively unimportant details. Melbourne was incorporated as a town in 1842, and as a city in 1847 ; Geelong was incorporated as a town in 1849.

(i.) *Institution of Road Districts.* The Imperial Act of 1842, under which the Governor of New South Wales was authorised to form districts for the purpose of self-government, has already been referred to. This Act was succeeded by the Act of 1850, under which the district of Port Phillip was separated from New South Wales, and which provided that the proclamation of districts (under the Act of 1842) which had not been followed by an election of councillors should be void, and where councillors had been elected the Letters Patent forming such districts could be revoked by petition. For the future such districts were only to be incorporated upon petition of the inhabitants to the Governor, who was authorised to establish elective district councils, with power to frame by-laws for making and maintaining roads and bridges, establishing schools, and levying local tolls and rates. The necessity for a more comprehensive scheme of local government soon became apparent, owing to the increase of settlement on the land which followed the excitement of the gold rush, and in 1852 two committees of the Legislative Council were appointed, one to enquire into the operations of district councils which had been established, the other to report generally upon the condition of the roads and bridges in the State, and as to how the funds for their construction and maintenance could be best expended. The report of the latter committee was of considerable value, because it formed the basis of the first Victorian Act which provided a scheme for the local government of country districts, namely the Roads Act of 1853. Under this Act a distinction was made between main roads and parish or cross roads. The Governor was authorised to declare any part of the colony to be a road district ; main roads were placed under the care of a central Road Board with an Inspector-General and staff, while parish roads were to be made and maintained by the district councils, who were empowered to levy rates for the purpose.

(ii.) *Establishment of Shires and Extinction of Road Districts.* The Act of 1853 continued in force for ten years, when it was repealed, and its provisions amended and

consolidated in the Road Districts and Shires Act 1863. By this Act the central Road Board was abolished, and the establishment of shires and shire councils was authorised. Any district having an area of not less than 100 square miles and a revenue from general rates of not less than £1000 might be incorporated as a shire, the duties and powers of which were the same as those of the districts, but additional privileges, such as power to raise loans and to grant licenses, were conferred upon the shires. Provision was also made for the regulation of the proceedings of shire councils, the preparation of voters' lists, elections, accounts, revenue, rates, auditors, and other matters, and these provisions have been substantially continued in later Acts. The result of the Act of 1863 was that the road districts were gradually developed into or were absorbed by the shires, and the next important measure which was passed, the Shires Statute Act of 1869, recognised only the latter, and with respect to shires retained the principal features of the preceding Act.

(iii.) *Constitution of Urban Municipal Districts and Boroughs.* In the meantime suburban districts and country towns were growing up, and in the year 1854 an Act was passed for the establishment of municipal boroughs in Victoria. Provision was made whereby any district having an area of not more than nine square miles, no part of which was more than six miles from any other part, and having a population of not less than 300, might, on petition, be constituted a municipal district. This Act, which thus originated those municipalities now known as boroughs (including cities and towns), was amended and repealed by the Municipal Institutions Consolidating and Amendment Act 1863, which re-enacted the principal features of the previous Act. These features are practically the same as those which now prevail with regard to boroughs. The Act of 1863 was in turn amended from time to time, and the law relating to boroughs was consolidated in 1869 by the Boroughs Statute Act.

(iv.) *Legislation applying to all Types of Municipalities.* Both the Shires Statute Act and the Boroughs Statute Act of 1869 were repealed and their provisions amended and consolidated by the Local Government Act 1874, which, after further improvements and extensions, was in turn consolidated by the Local Government Act 1890, which was itself amended from time to time. In 1899 a select committee of the Legislative Assembly was appointed to enquire into and to report upon the working of the Act of 1890 and to suggest amendments required in the law relating to local government. This committee was subsequently constituted a Royal Commission, and in 1902 issued a report to which was appended the draft bill which became the Local Government Act 1903, the provisions of which now regulate the working of municipalities in the State.

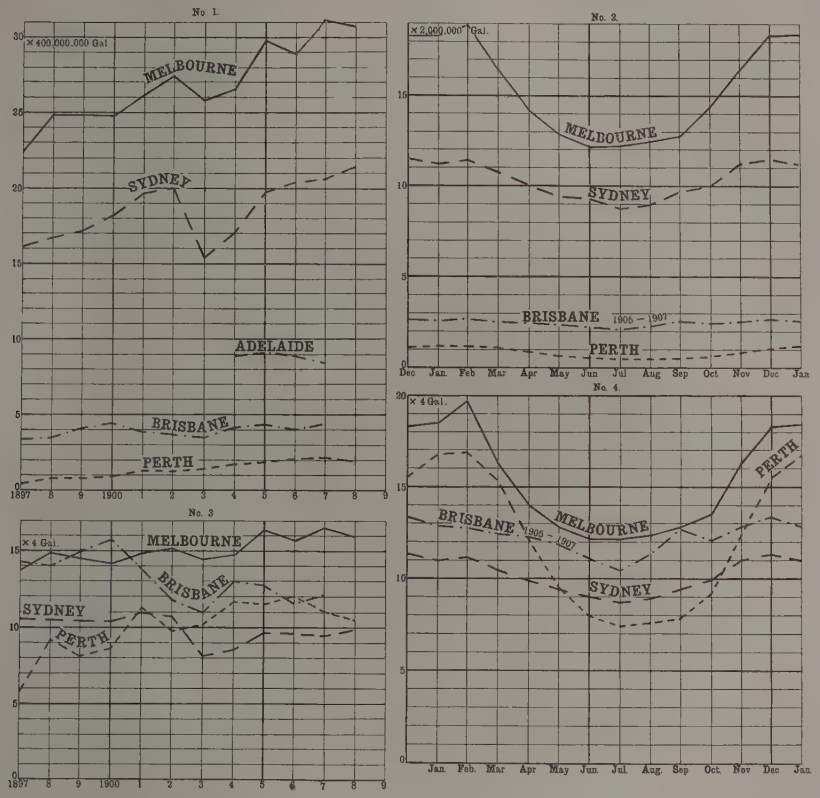
2. **Local Government Systems now in Operation.**—Local government is now administered under the Act of 1903 throughout the whole of the State, with the exception of about 6000 square miles in the mountainous parts of the county of Wonnangatta, and the whole of French Island.

(i.) *Constitution of Municipalities.* Provision is made for the continuation of municipalities established under previous Acts and for the constitution of new ones.

(*a*) *Shires.* Any part of the State containing ratable property yielding, upon a rate not exceeding one shilling in the pound, a sum of £1500 may be constituted a shire upon petition of at least fifty inhabitants.

(*b*) *Boroughs.* Any part of the State, not exceeding in area nine square miles, and having no point distant more than six miles from any other point, and containing a population of not less than 500 and ratable property yielding, upon a rate not exceeding one shilling in the pound, a sum of £300, may be constituted a borough upon petition of at least 250 resident householders. Any borough having during the preceding financial year a revenue of £10,000 may be declared a town, or having a revenue of £20,000 may be declared a city upon petition under the common seal of such borough. Provision is

GRAPHS SHEWING CONSUMPTION OF WATER IN METROPOLITAN AREAS.—
MELBOURNE, SYDNEY, AND PERTH, 1897 TO 1908, AND BRISBANE, 1905 TO 1907.



EXPLANATION OF GRAPHS.—No. 1.—Total annual consumption of water in metropolitan area, 1897 to periods shewn on graph. In the Adelaide water districts there are no governing meters; the quantities shewn are as recorded by gaugings taken at the reservoirs and include evaporation and absorption. The base of each small rectangle represents an interval of one year, and the vertical height represents 400,000,000 gallons.

No. 2.—Average daily consumption of water in metropolitan area during each month of the year. (Mean of period 1897 to 1908.) The base of each small rectangle represents an interval of one month, and the vertical height represents 2,000,000 gallons.

No. 3.—Average daily consumption of water per head of population in metropolitan area, 1897 to 1908. The base of each small rectangle represents an interval of one year, and the vertical height represents 4 gallons.

No. 4.—Average daily consumption of water per head of population in metropolitan area during each month of the year. (Mean of period 1897 to 1908.) The base of each small rectangle represents an interval of one month, and the vertical height represents 4 gallons.

MAP SHEWING THE POSITION AND EXTENT OF THE "AUSTRALIAN ARTESIAN BASINS."



The area occupied by these basins is approximately 775,000 square miles, of which 376,000 square miles are in Queensland, 139,000 square miles in South Australia, 152,000 square miles in New South Wales, 33,000 square miles in Victoria, and 75,000 square miles in Western Australia.

also made for severing any part of a municipality and annexing the same to an adjoining municipality: for dividing municipalities into any number of subdivisions not exceeding eight; and for uniting two or more boroughs which form one continuous area so as to form one borough.

(c) *Townships.* Upon petition signed by not less than twenty-five ratepayers resident in any portion not exceeding three square miles in extent of any shire and distant more than ten miles from the boundaries of the city of Melbourne, the Governor may, with the consent of the municipal council, proclaim such portion a township.

(ii.) *The Municipal Council.* It is provided by the Act of 1903 that, in the case of existing municipalities, the council shall consist of the number of members assigned to it at the commencement of the Act, but, when the number of members is determined under the Act, such number shall be, in case the district is not subdivided, some multiple of three, not less than six nor more than twenty-four, and, in case such district is subdivided, the number produced by the return of three councillors for every subdivision. Every person liable to be rated in respect of property in the municipal district of the ratable value of £20 at the least is qualified to hold the office of councillor in any municipality, provided that no female, nor any undischarged bankrupt, nor a person attainted of treason or convicted of felony shall be so qualified. Other persons may also be disqualified on the ground of interest. Provision is made for the retirement of one-third of the councillors annually in rotation, and for the election and privileges of the chairman, who is styled the mayor of a borough and the president of a shire.

(iii.) *The Municipal Electorate.* Every person who on the 10th June in any year has attained the age of twenty-one years, and is liable to be rated in respect of property within a municipal district, in respect of which all rates made before the 10th March of the year have been paid, is entitled to be enrolled as a voter, but no person may be enrolled in respect of property rated under £5 a year, unless there is a house on the property, and he resides there. The occupier and the owner of any ratable property may not be both enrolled in respect thereof, the former having the right to be enrolled instead of the latter. Corporations liable to be rated may appoint not more than three persons to be enrolled in their place. Joint occupiers and owners, not exceeding three, are each entitled to be enrolled, and in case more than three persons are rated in respect of any property, those whose names stand first in order upon the rate last made or upon the last valuation and return are so entitled. All persons who are not entitled to be enrolled by reason solely of non-payment of rates may be placed on a separate voters' list, and for the purpose of enabling them to vote at elections of members for the State Parliament they may be included in the rolls of ratepaying electors therefor if duly qualified in other respects. Plurality of votes is allowed on the scale shewn in the following statement:—

VICTORIA.—PROPERTY QUALIFICATIONS FOR ENROLMENT AS MUNICIPAL VOTER.

Number of Votes.	Annual Ratable Value of Property.	
	Boroughs (including Cities and Towns).	Shires.
1	Under £50.	Under £25.
2	From £50 to £100.	From £25 to £75.
3	£100 and upwards.	£75 and upwards.

Voters' lists are prepared annually by collectors appointed for the purpose; provision is made for the revision of the lists, for the time and place of holding elections, for the

nomination of candidates, for the application of the Voting by Post Act 1900; for the appointment of officers, and for the meetings and proceedings of councils.

(iv.) *Powers and Functions of Councils.* Municipal councils are empowered to make by-laws for a great number and variety of purposes, of which the most important are as follow:—The control and regulation of roads and streets, buildings, wharves, and public places, of nuisances, passenger vehicles, carters, boatmen, and porters; the regulation and maintenance of water supply, sewerage, drainage, and lighting; the establishment and control of fairs and public sales, labour marts and offices; the preservation and management of commons and public reserves, the regulation of traffic and hoardings; the public health and the prevention of contagious or infectious diseases, and generally for maintaining the good rule and government of the municipality. Councils are authorised to undertake the supply of light, heat, or motive power for public or private purposes; they may construct and maintain tanks, dams, and reservoirs, and may provide public baths, markets, weighbridges, pounds, abbatoirs, places of public recreation, and charitable institutions. One of the principal functions of the councils is to construct and maintain public highways, streets, bridges, ferries, and jetties within their respective localities. At the request of the council the provisions of the Act as to the maximum weight which it is permissible to carry on vehicles on any public road within the municipality, may be made to apply by proclamation.

(v.) *Ratable Property.* All land, including buildings and improvements thereon, within a municipality is ratable property, except the following:—Crown lands unoccupied or used for public purposes; land used exclusively for commons, mines, public worship, mechanics' institutes, public libraries, cemeteries, free primary schools, and charitable purposes; land vested in, in the occupation of, held in trust for, or under the control of any municipality, local governing body, or commissioners under the Rates Act; land vested in the Railway Commissioners, in the Minister of Public Instruction, in the Board of Land and Works, in the Commissioners of the Melbourne Harbour Trust, and in the Melbourne and Metropolitan Board of Works. The valuation of all property is computed at its net annual value, that is to say, at the rent at which the same might reasonably be expected to let from year to year, free of all usual tenants' rates, taxes, and cost of insurance, but no ratable property may be computed as of an annual value of less than 5 per cent. upon the fair capital value of the fee-simple thereof.

(vi.) *Rates.* The municipal councils are empowered to levy rates, which, together with grants and subsidies received from the Government, license fees, market dues, rents, tolls, and sanitary charges, form their chief sources of income. The rates which may be levied are of three kinds, namely—general, extra, and separate rates.

(*a*) *General Rates* are levied at least once in every year, and must not exceed two shillings and sixpence in the pound of the net annual value, nor be less than sixpence in the pound of such value. Every general rate must be made for one year or half a year, or such other period less than a year, but not less than three months, as the council thinks fit, and must be levied on the occupier of the property rated, or if there be no occupier, or if the occupier be the Crown or the Minister of Public Instruction, or a public or local body, then upon the owner of the property.

(*b*) *Extra Rates* may be levied in any municipal district which is subdivided equally in respect of all the ratable property within any one or more of the subdivisions, but cannot be levied except in accordance with the requisition of not less than two-thirds of the councillors returned by such sub-division. The amount of general and extra rates levied in any year must not exceed two shillings and sixpence in the pound of the net annual value.

(*c*) *Separate Rates* may be levied where it appears to the council that any works or undertakings authorised by the Act are for the special benefit of any particular portion of the municipal district, but may be made only upon petition signed by a majority of the occupiers and by at least one-third of the owners of the properties affected, and must be confirmed by order of the Governor-in-Council. Separate rates may be levied equally on all properties affected, or may be differential according to the benefits to be received by different properties, and the amount of the rate must be such as will, in the opinion of the council, suffice to provide for the payment of interest and periodical repayments of, or sinking fund for, the money borrowed on the security of such rate.

(vii.) *Borrowing Powers.* The council of every municipality may borrow money upon the credit of such municipality by the sale of debentures, either for the purpose of liquidating previous loans or for the purpose of constructing certain specified permanent works or undertakings, such as the construction, alteration, or enlargement of streets, roads, bridges, ferries, sewers, and drains; the construction and purchase of waterworks, electric light or gas works, abattoirs, markets, baths, pleasure grounds, libraries, museums, and places of public resort and recreation; the establishment of hospitals, asylums, and other buildings for charitable purposes; the destruction and disposal of refuse, and the purchase of land or any easement, term, right, or privilege in, over, or affecting land. The amount of money so borrowed at any time for permanent works must not exceed ten times the average income of the municipality for the three preceding years, and the amount borrowed in the case of any municipality already indebted must not exceed the difference obtained by subtracting from ten times such average income the balance remaining unpaid of any previous loans. The question as to whether any loan for the purpose of permanent works shall be incurred must be submitted to a poll of the ratepayers upon demand signed by any twenty persons whose names are inscribed on the municipal roll. The council of any municipality may, in addition to the borrowing powers mentioned above, borrow money for permanent works or undertakings on the security of its income, but not upon the credit of the municipality, by the issue of debentures or by a mortgage over such income. The amount of money so borrowed must not at any time exceed five times the average income of the municipality for the three preceding years. The income referred to does not include moneys derived from general, separate, or extra rates, special improvement charges, publicans' licenses, of endowment from the consolidated revenue fund. Temporary advances by way of overdraft of the current account may also be obtained, but must not at any time exceed one-half the prior year's revenue.

(viii.) *Endowment.* Under the Local Government Act 1874 an annual endowment of £310,000 was provided for the municipalities. This amount ceased to be payable in 1879, but a subsidy, amounting to £310,000, was voted by Parliament annually, and was increased year by year, until £450,000 was granted in 1889-90 and 1890-91. The Local Government Act 1891 authorised the payment of an annual endowment of £450,000, but this amount was reduced year by year to £50,000 in 1902, but was increased to £75,000 for the year 1906-7, and to £100,000 from the 1st July, 1907. For the purpose of distributing the endowment, the shires are classified. Under the Municipal Endowment and Reclassification of Shires Act 1907, a new classification was adopted under which the amount of the endowment is to be allocated. In addition to the endowment of £75,000 (increased to £100,000 from the 1st July, 1907) the municipalities received from the Government during the financial year 1909-10 a sum of £84,544 out of the Licensing Act Fund as the equivalent for (*a*) fees for licenses, (*b*) fees for the registration of brewers and spirit merchants, and (*c*) fines, penalties, and forfeitures incurred under the Licensing Act 1876. Under the Act of 1907 the endowment of £100,000 is payable in equal moieties in March and September of each year. No city or town is entitled to receive any part of the endowment. The distribution

amongst the boroughs and shires is based on the amount of general and extra rates received in the twelve months ending on the preceding 30th September according to the following scale :—

VICTORIA.—ENDOWMENT OF BOROUGHS AND SHIRES, 1909-10.

To every Borough or 1st Class Shire, 3s. in the £	To every 4th Class Shire, 8s. in the £
„ „ 2nd Class Shire 5s. „ „	„ 5th „ 10s. „ „
„ „ 3rd „ „ 6s. „ „	„ 6th „ 12s. „ „

For the three financial years commencing the 1st July, 1907, however, the amounts were definitely fixed by Act No. 2129.

3. Boroughs and Shires.—Number, Population, and Value of Ratable Property, 1901 to 1910.—The following table shews the number of cities, towns, boroughs, and shires, their estimated population, the number of ratepayers and dwellings, and the value of ratable property for the years 1901 to 1910 inclusive :—

VICTORIA.—PARTICULARS OF MUNICIPALITIES, 1901 to 1910.

Financial Year.	Number of Municipalities.	Estimated Population.	Number of Ratepayers (both sexes).	Estimated Number of Dwellings.	Estimated Value of Real Property.	
					Total.	Annual.
CITIES, TOWNS, AND BOROUGHS.						
					£	£
1901	58	627,237	153,783	130,358	67,302,423	4,765,632
1902	60	*647,397	157,820	*134,465	77,289,493	5,223,282
1903	60	632,607	155,262	140,248	92,099,451	5,308,546
1904	60	652,658	158,691	142,352	93,376,880	5,366,477
1905	60	657,815	159,953	143,667	94,583,732	5,498,471
1906	‡60	684,358	169,536	149,649	99,354,665	5,664,425
1907	60	695,192	171,909	151,833	100,801,295	5,779,231
1908	60	708,672	176,420	153,629	103,666,178	5,944,691
1909	60	719,293	178,928	155,277	106,149,960	6,080,447
1910	60	731,050	183,419	159,398	108,863,963	6,232,091
SHIRES.						
					£	£
1901	150	571,683	159,128	122,645	106,839,331	5,771,865
1902	†148	*551,523	147,671	*118,538	107,812,500	5,661,805
1903	148	557,285	150,724	118,996	111,803,468	5,880,386
1904	148	556,350	152,204	121,643	115,766,850	6,071,353
1905	148	552,414	153,908	121,335	116,336,442	6,244,799
1906	‡146	541,242	149,350	118,339	117,260,959	6,130,718
1907	146	565,739	151,869	120,114	121,797,646	6,395,094
1908	146	573,715	152,973	121,465	129,059,488	6,694,209
1909	146	581,866	155,492	123,459	136,538,811	7,043,511
1910	146	588,156	159,410	124,739	143,142,655	7,332,397

* Census figures. † The shires of Caulfield and Malvern were constituted boroughs in 1901. ‡ The shires of Coburg and Camberwell were constituted boroughs, and North Melbourne and Flemington were joined to City of Melbourne in 1905.

4. Municipal Assets and Liabilities, 1904 to 1909.—The assets of municipalities may be classified under three heads—(*a*) the municipal fund, (*b*) the loan fund, and (*c*) property ; the liabilities under two heads—(*a*) the municipal fund, and (*b*) the loan fund. The following table shews the amount of municipal assets and liabilities for each financial year from 1904 to 1909 inclusive :—

VICTORIA.—MUNICIPAL ASSETS AND LIABILITIES, 1904 to 1909.

Items.	1904.	1905.	1906.	1907.	1908.	1909.
ASSETS.						
	£	£	£	£	£	£
MUNICIPAL FUND—						
Uncollected rates	119,013	119,028	124,174	112,435	116,323	114,598
Other assets	168,107	168,737	184,380	196,048	182,790	267,944
LOAN FUND—						
(a) Sinking funds						
Amount at credit	680,989	701,503	740,382	772,662	796,272	812,920
Arrears due	4,352	4,459	1,341	3,616	2,806	2,827
(b) Unexpended balances	160,321	112,643	302,400	325,901	220,674	106,852
PROPERTY—						
Buildings, markets, etc.	2,495,101	2,530,858	2,573,017	2,697,701	2,826,394	2,992,809
Waterworks	226,084	234,461	221,548	223,687	220,669	207,451
Gasworks	68,744	65,760	60,510	66,269	66,638	57,399
Total	3,922,711	3,937,449	4,207,752	4,398,319	4,432,466	4,562,800
LIABILITIES.						
	£	£	£	£	£	£
MUNICIPAL FUND—						
Arrears due sinking funds	4,352	4,459	1,341	3,616	2,806	2,827
Overdue interest	17,875	16,637	16,951	17,060	18,535	15,639
Bank overdrafts	89,825	90,660	89,370	94,825	122,453	120,705
Temporary Government advances	8,098	4,018	694	...	...	...
Other liabilities	132,098	139,717	175,964	179,342	194,283	233,359*
LOAN FUNDS—						
Loans outstanding	4,205,886	4,186,602	4,375,116	4,442,713	4,437,673	4,416,103
Due on loan contracts	29,947	27,438	2,256	39,726	88,086	49,452
Total	4,488,081	4,469,531	4,661,692	4,777,282	4,863,836	4,838,085

* Including £90,913 due on current contracts.

5. **Revenue and Expenditure of Municipalities, 1904 to 1909.**—The following table shews the revenue from various sources, and the expenditure under various heads, of municipalities during each year from 1904 to 1909 inclusive :—

VICTORIA.—REVENUE AND EXPENDITURE OF MUNICIPALITIES, 1904 to 1909.

Items.	1904.	1905.	1906.	1907.	1908.	1909.
SOURCES OF REVENUE.						
	£	£	£	£	£	£
Taxation — Rates	808,082	802,253	836,024	887,580	902,741	946,956
Taxation — Licenses	105,123	112,475	106,621	106,742	106,758	101,682
Taxation — Dog fees	15,435	16,022	16,257	17,455	17,628	18,751
Taxation — Market and weighbridge dues	52,772	55,259	56,939	57,190	57,386	68,014
Government endowments and grants	80,681	90,572	95,090	117,304	172,648	175,601
Contributions for streets, etc	20,485	22,755	18,597	30,816	34,246	35,173
Sanitary charges	50,097	55,731	56,052	56,918	58,072	59,966
Rents	59,956	60,344	63,242	66,601	67,387	69,842
Other sources	117,759	129,810	139,470	163,825	208,403	195,831
Total	1,310,390	1,345,221	1,388,292	1,504,431	1,625,269	1,671,816
HEADS OF EXPENDITURE.						
Salaries, etc	138,884	136,066	141,438	147,933	152,302	158,436
Sanitary work, street cleaning, etc.	126,219	131,378	135,466	134,632	142,769	150,964
Lighting	69,877	69,915	72,571	76,217	79,832	82,354
Fire brigades' contributions	16,668	16,061	17,431	17,144	20,724	22,051
Public works — Construction	167,919	198,275	217,346	266,658	313,607	288,869
Public works — Maintenance	360,831	378,859	403,791	441,335	474,188	490,341
Formation of private streets, etc.	19,504	23,676	19,627	28,296	32,718	37,888
Redemption of loans	43,959	55,866	49,483	54,998	60,568	58,263
Interest on loans	191,310	186,439	188,111	196,965	198,632	201,199
Charities	13,117	13,185	13,637	13,401	14,666	15,241
Other expenditure	142,460	134,023	118,748	156,894	187,830	173,154
Total	1,290,748	1,343,743	1,377,649	1,534,473	1,677,836	1,678,760

6. **The Melbourne and Metropolitan Board of Works.**—This Board was established by an Act passed at the end of the year 1890, and entered upon its duties in June, 1891. The Board consists of forty members, one of whom is a chairman elected every four years by the other members, the retiring chairman being eligible for re-election. Nine members are elected by the Melbourne City Council, four by the South Melbourne Council, three by the Prahran, two each by the Fitzroy, Richmond, St. Kilda, and Collingwood, and one each by the other suburban municipal councils. The district over which the Board exercises control consists of eleven cities, twenty towns, and one borough, one shire, and parts of three others, comprising a total area of 90,821 acres, and containing an estimated population on the 31st December, 1909, of 553,880. The waterworks for the supply of Melbourne and suburbs were originally carried out by the Government, which had for that purpose contracted loans amounting to £2,389,934; these works were vested in the Board in 1891. The primary object of the creation of the Board was not, however, to take over these works, but was to supply the long called for and pressing want of a sewerage system for the metropolis. The plans and estimates of the cost of the metropolitan sewerage were originally prepared by an expert civil engineer from England, and were furnished to the Board on its creation. The plan recommended by the designer and selected by the Board's engineer-in-chief was estimated to cost £5,030,000, but this plan was modified by the engineer-in-chief, with the concurrence and assistance of the Board, so as to reduce the estimated cost to £3,451,000, and plans were made and the work carried out accordingly. The original plan and estimate contemplated only the construction of the main sewers, but this was altered by Parliament, which added the duty of constructing branch sewers and of treating right-of-ways as streets and sewering them likewise, an obligation which added considerably to the original estimate. To carry out its work the Board is authorised to borrow £8,750,000, exclusive of the loans contracted by the Government for the purpose of waterworks and taken over by the Board. The liability on Government loans on the 30th June, 1910, was £1,688,663, and for loans raised by the Board was £8,701,000. The Board is still empowered to borrow £750,271 before reaching the limit of its borrowing powers.

(i.) *Total Cost of Water Supply and Sewerage, 1853 to 1909-10.* The subjoined table shews the total expenditure on construction and maintenance of water supply and sewerage from 1853 to 1910. The figures given include proportion of salaries, law costs, advertising, travelling expenses, etc.

MELBOURNE AND METROPOLITAN BOARD OF WORKS.—TOTAL COST OF CONSTRUCTION AND MAINTENANCE OF WATER SUPPLY AND SEWERAGE, 1853 to 1910.

Period.	Water Supply.		Sewerage.			Total.
	Construction.	Maintenance.	Construction.	Maintenance.	Working Expenses.	
	£	£	£	£	£	£
1853 to 1890-1 ...	3,378,246	149,622	...	...	...	3,527,868
1890-1 to 1899-1900	322,627	146,678	3,026,162	*20,411	*21,286	3,537,164
1900-1	14,330	18,445	280,973	13,287	11,240	338,275
1901-2	16,053	20,786	302,460	10,906	13,430	363,635
1902-3	10,412	21,480	311,615	12,047	14,495	370,049
1903-4	8,649	20,765	293,602	12,696	13,860	349,572
1904-5	1,391	16,105	425,137	4,750	21,929	469,312
1905-6	16,562	15,539	340,386	5,242	23,338	401,067
1906-7	25,119	17,731	277,820	4,652	21,180	346,502
1907-8	33,058	23,004	262,148	4,075	31,149	353,434
1908-9	65,108	22,163	220,900	3,962	31,806	343,939
1909-10 ...	29,962	22,999	283,827	4,589	33,495	374,872
Total ...	3,921,517	495,317	6,025,030	96,617	237,208	10,775,689

* From the 30th June, 1897, to the 30th June, 1900.

(ii.) *Revenue and Expenditure of Melbourne and Metropolitan Board of Works.* The following table shews the actual receipts and expenditure, and also the loan receipts and expenditure of the Board during each year from 1901-2 to 1909-10, inclusive:—

MELBOURNE AND METROPOLITAN BOARD OF WORKS.—REVENUE AND EXPENDITURE DURING EACH YEAR, 1901-2 to 1909-10.

Particulars.	1901-2.	1902-3.	1903-4.	904-5.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.
ORDINARY RECEIPTS.									
	£	£	£	£	£	£	£	£	£
Water supply ...	171,956	179,885	167,036	181,890	186,179	214,834	229,674	241,790	248,356
Sewerage	124,696	148,641	161,030	171,448	192,518	216,236	226,609	242,296	253,756
Live stock—Met. farm	19,929	35,568	28,970	38,559	42,078	47,349	39,132	22,153	31,289
In- { Water supply	...	17	19	...	...	20	129	15	138
terest { Sewerage ...	17,448	18,605	25,037	26,988	23,785	20,635	16,562	15,929	10,229
Total	334,029	382,716	382,092	418,885	444,560	499,074	512,106	522,183	543,768
ORDINARY EXPENDITURE.									
General management	33,621	33,933	32,513	31,081	31,484	31,095	33,267	33,984	34,863
Live stock—Met. farm	16,702	25,718	23,345	23,985	29,050	47,276	41,536	20,316	17,900
Main- { Water supply	22,205	22,980	21,990	20,095	20,079	21,523	25,018	24,643	24,944
t'ance { Sewerage ...	24,396	26,590	26,655	26,833	28,765	33,214	35,588	38,016	42,921
In- { Water supply	102,670	102,959	104,114	101,999	102,081	101,628	101,044	102,297	101,578
terest { New offices ...	...	...	...	932	932	932	...	...	...
{ Sewerage ...	192,952	206,964	226,861	239,929	257,059	263,410	270,130	280,647	286,655
Total	392,546	419,144	435,478	444,854	469,450	499,078	506,583	499,903	508,861
LOAN RECEIPTS.									
Water supply ...	1,636	2,855	2,103	1,583	1,937	2,492	6,725	2,435	5,272
Sewerage	88,425	87,664	88,164	96,588	84,020	79,088	72,415	67,771	61,509
Proceeds of loans ...	396,238	722,641	950,927	189,696	346,519	395,085	307,500	429,595	257,853
Miscellaneous ...	...	215	152	3,508	16,204	12,332	14,865	15,246	9,104
Total	486,299	813,375	1,041,346	291,375	448,680	488,997	401,505	515,047	333,738
LOAN EXPENDITURE.									
Water sup. construct'n	17,058	12,925	10,457	8,990	16,045	26,023	40,183	67,271	35,984
Sewerage construction	410,760	409,232	395,104	472,384	414,310	336,799	309,194	272,508	331,214
Expenses in floating & redemption of loans	5,200	25,773	528,561	7,360	67,533	160,163	34	229,189	2,677
Miscellaneous ...	—*4,293	19,050	20,116	3,417	12,780	8,670	18,655	24,961	18,002
Total ...	428,725	466,980	954,238	492,151	510,668	531,655	368,066	593,929	387,877

* Excess of stock distribution over purchases.

7. **Melbourne Metropolitan Water Supply.**—From the year 1835 to 1857 the inhabitants of Melbourne depended for their water supply entirely upon rainwater caught in tanks, or upon water carts filled from the River Yarra above the falls. In 1848 the city

council appointed a committee to enquire into and report generally upon the water supply and sewerage of the city. This committee recommended that a comprehensive system of sewerage should be carried out, and a rate levied for that purpose; the stringent enforcement of provisions as to slaughtering stock and as to the removal of refuse; that the space between Melbourne and the beach be cleared so as to allow the free access of pure sea air; that a Building Act should be passed and that the streets should henceforth be formed of a uniform width. Most of these recommendations were carried out. A Building Act was passed in 1849, and the filthy lanes in the city were remade and drained. In 1845 the first proposal was made to supply the city with water, by means of a water-wheel to be worked by the Yarra Falls. Five years later a small steam engine was erected to pump water into a tank situated in Flinders Street, from which water was drawn by carts, and in 1851 an elaborate report was issued by the city surveyor, recommending a plan for the city water supply which was soon afterwards adopted. The source from which it was proposed to conserve the water for the supply of Melbourne consisted of several creeks and springs which flow from Mount Disappointment, about thirty-two miles north of the metropolis, and which, when united, form the Plenty River; this scheme was adopted, and has resulted in the Yan Yean Reservoir scheme. In 1853 the duty of supplying water to the metropolis was transferred from the city council to the Commissioners of Sewers and Water Supply, and towards the end of the same year the work of construction of the Yan Yean system was commenced. On the 31st December, 1857, the first water was turned on by Major-General McArthur, acting for the Governor, Sir Henry Barkly, K.C.B.

(i.) *Development of System, 1857 to 1910.* The following statement shews the development which has taken place in the water supply system of Melbourne during the fifty-three years since its inception:—

MELBOURNE WATER SUPPLY SYSTEM, 1857 to 1910.

Year.	Served Population.	Capital Cost.	1000 Gallons, Charge per—	Rate in £	Mains & Pipes, Mileage of—	Supply in Gallons, Average daily.
		£				
1857	95,442	748,974	10/- and 6/-	1/-	104	3,250,000
1910	558,600	3,921,517	1/-	7d.	1,335	34,508,414

(ii.) *Proposed Extensions.* The water supply committee of the Metropolitan Board of Works recently recommended the augmentation of the catchment area by permanently reserving two areas amounting in all to 140 square miles—the one comprising the Upper Yarra watershed, eighty-one square miles in area; the other comprising the O'Shanassy River district, fifty-nine square miles in extent. A second service reservoir—having a capacity of 25,000,000 gallons—was constructed at Preston, costing £52,097 to 30th June, 1910 (this also includes cost of scour main).

(iii.) *Description of Water Supply Systems.* The water supply of Melbourne consists of two main systems—the Yan Yean and the Maroondah.

(a) *The Yan Yean System* is the main source of supply. It commences by collecting the water from the Silvery and Wallaby Creek valleys, to the north of Mount Disappointment 2700 feet high, which forms one of the prominent heights of the main Dividing Range in Victoria. The waters of the Silvery Creek are brought by means of an aqueduct a little over eight miles long, constructed at a cost of £59,603, to a weir at the head of the Wallaby Creek aqueduct which carries the combined waters of the two creeks for a distance of five and a quarter miles, and discharges over the crest of the Dividing Range at a height of 1694 feet above sea level, and then

drops a height of 133 feet in 683 feet into Jack's Creek, one of the branches of the Plenty River. The Wallaby Creek aqueduct was constructed at a cost of £69,712. Its carrying capacity is 33,000,000 gallons a day, while the average daily flow of the combined Silvery and Wallaby Creeks is 12,000,000 gallons. From its drop into Jack's Creek the water follows the natural bed of the stream for about three miles to the Tourourrong reservoir, which is a small reservoir of about thirty-six acres in extent, and having a capacity of 60,000,000 gallons. From Tourourrong the Clear Water Channel carries the water for a distance of four and three-quarter miles to the old Plenty inlet channel of the Yan Yean reservoir. This channel is 13 feet 6 inches wide and 4 feet 6 inches deep, the section being a quadrant of a circle of 4 feet 9 inches radius, with one to one side slopes. The fall of this channel is 7 feet 6 inches to the mile, with a carrying capacity of 12,000,000 gallons per day. The cost of the Tourourrong reservoir and this channel was £77,952. In it there are waterfalls, the highest of which is 17 feet. The water from the old Plenty channel enters the Yan Yean reservoir through a spur, forming its western bank, by means of a tunnel 1000 feet long. The Yan Yean reservoir, which is twenty-two miles from the city, is formed by the construction of an earthen bank 49 chains long, 30 feet high, 20 feet wide on top, with a slope next the water of three to one, and an outside slope of two to one. The bywash is 5 feet below the top of the embankment, at a level of 602 feet above low-water mark in Hobson's Bay. The reservoir, when full, covers an area of 1560 acres, with a maximum depth of 26 feet, and an average depth of 18 feet. Its total capacity is 6,400,000,000 gallons, of which 5,400,000,000 gallons are available for consumption. From the Yan Yean reservoir to the Pipe Head dam at Morang, a distance of seven miles, an open aqueduct capable of delivering 33,000,000 gallons a day has been constructed. From the Morang reservoir, the bywash of which is 485 feet above sea level, a 30-inch cast-iron main, 27-inch cast-iron and a 30-inch wrought-iron main carry the water a distance of seven miles to the storage reservoir within the metropolitan area, at Preston. The No. 1 Preston reservoir is constructed partly in excavation and partly in bank; it is 20 feet deep, and holds 16,000,000 gallons. The bywash is 328 feet above the sea level, and the cost to 30th June, 1910, including scour main was £23,239. A second reservoir of 25,000,000 gallons capacity was built during 1908-9, the walls being of reinforced concrete with earth backing. These are the main distributing reservoirs of the central city supply.

(*b*) *Maroondah System.* The water for this system is obtained from the Maroondah River, a tributary of the Yarra. The waters of the Graceburn are picked up by a small weir 686 feet above sea level, and carried for a distance of three-quarters of a mile in a concrete-lined channel to a well near the main road leading from Healesville to Marysville. From this well an 18-inch wrought-iron pipe, one and a quarter miles long, leads the water to the main Maroondah aqueduct. The completed Maroondah scheme involves a storage reservoir with a dam 105 feet high, calculated to store 2,000,000,000 gallons of water. This dam has not yet been constructed, as the natural flow of the creeks, together with the storage in Yan Yean reservoir, has proved quite capable of providing all the water at present required for the metropolis. The creeks contributing to the flow in the Maroondah aqueduct, in addition to the Graceburn, are the Coranderrk, Donnelly's and Sawpit Creeks. In each case the water is conveyed by pipes into the main aqueduct from diversion weirs on the creeks. A temporary weir of Portland cement concrete has been constructed across the Maroondah River, from which point the water is led in an aqueduct forty-one miles long to the Preston reservoir, where it joins the water from the Yan

Yean system. The channel, owing to recent improvements, is now capable of delivering 30,000,000 gallons daily, the cross section being a quadrant of three feet ten inches radius with one to one slopes and a fall of one foot to the mile. The valleys are crossed by wrought-iron syphons, and with the exception of the Plenty River, which is crossed on a wrought-iron girder bridge, all the syphons are laid under the beds of streams. Each syphon is provided with a scour pipe large enough to take the full flow of the aqueduct, enabling the water to be directed down any of the natural watercourses when it becomes necessary to empty any length of the aqueduct for cleansing purposes. The total cost of the Maroondah system to 30th June, 1910, was £770,312.

(c) *High Level System.* Besides the Yan Yean and Maroondah systems, the high levels of the eastern suburbs of Melbourne are provided for by a direct main from the Yan Yean reservoir. This main is thirty-two inches in diameter, constructed of wrought-iron plates from $\frac{1}{4}$ inch to $\frac{7}{16}$ inch thick, 20$\frac{1}{2}$ miles long, and cost to the 30th June, 1910, £199,147. The discharge is about 9,000,000 gallons per day. There is a storage reservoir of 9,000,000 gallons capacity at Surrey Hills, the by-wash of which is 430 feet above sea-level.

(d) *O'Shanassy Supply.* During 1908, after a period of extended drought, it became evident that to provide for the growing needs of the metropolis, additional water supply resources must be acquired and, after a lengthy investigation it has been found that the most efficient and economical results will be obtained by introducing a third system of supply from the O'Shanassy River, a tributary of the Yarra above Warburton. This project involves the construction of an open aqueduct and pipe line of an aggregate length of about 48$\frac{1}{2}$ miles, delivering water to the Eastern Metropolis by way of Mitcham. The watershed of the O'Shanassy River has been excised from the permanent forests area and vested by the Governor-in-Council in the Melbourne and Metropolitan Board of Works. The Board is now seeking to acquire the lands necessary for the construction of these works, and authority for the necessary expenditure has been granted by Parliament. Surveys, designs and contracts are in course of preparation for these works.

(iv.) *Catchment Areas, Reservoirs, and Aqueducts.* (a) *Drainage Areas.* The whole of the catchment areas are absolutely free from population or cultivation. The Government pursued the policy of gradually purchasing all private rights over the various watersheds, which policy the Board has carried on and completed; the original owners have been bought out, while the township of Fernshaw, in the Maroondah system, was entirely purchased and obliterated. The present drainage areas from which the water is delivered cover the following areas:—

MELBOURNE WATER SUPPLY.—CATCHMENT AREA, 1910.

	Silver and Wallaby Creeks.	Plenty River and Jack's Ck.	Yan Yean Reservoir Catchment.	Maroondah Catchment.	Total.
Area in acres	12,000	12,000	5,000	40,000	69,000

All the water is delivered by gravitation, no pumping being required in any portion of the area supplied.

(b) *Storage Reservoirs.* In connection with distribution there are eight service reservoirs having a total capacity of 73,000,000 gallons. From the Preston reservoirs, which form the main distributing point, a number of service mains lead into the reticulation system of the metropolis. The total daily quantity of water which can be sent into Melbourne is as follows:—

MELBOURNE WATER SUPPLY.—MAXIMUM DAILY SUPPLY WHICH CAN BE DELIVERED.

System.	Yan Yean.	Maroondah.	High Level Main.	Total Supply.
Gallons per day ...	33,000,000	30,000,000	9,000,000	72,000,000

(c) *Aqueducts.* Up to the 30th June, 1910, 191 miles 9½ chains of 12 inch to 54 inch mains and 1062 miles 79¼ chains of reticulation mains, below 12 inch, had been laid, in addition to which there were 80 miles 72¾ chains of aqueducts and syphons, or a total length of aqueducts, mains, and reticulation pipes of 1335 miles 1½ chains.

(v.) *Quantity of Water, Number of Houses, and Population Supplied, 1901 to 1910.* The following table gives various particulars shewing the increase in the supply of water in Melbourne and suburbs from 1901 to 1910 inclusive:—

MELBOURNE WATERWORKS.—NUMBER OF HOUSES, POPULATION, AND WATER SUPPLIED, 1901 to 1910.

Year Ended 30th June.	Number of Houses Supplied.	Estimated Population Supplied.	Average Daily Supply.	Total Supply for the Year ended 30th June.	Average Daily Supply.		Rate Levied.	Assessments of Tenements Served by Metropolitan Water Supply.
					Per House.	Per Head of Estimated Population.		
	No.	No.	,000 Gallons.	,000 Gallons.	Gallons.	Gallons.		£
1901 ...	104,548	491,780	28,722	10,483,680	275.38	58.40		3,479,721
1902 ...	105,051	498,030	30,038	10,963,945	286.62	60.31		3,550,573
1903 ...	106,176	502,120	28,469	10,391,163	269.56	56.70	6d. in the £	3,830,872
1904 ...	107,701	502,060	28,997	10,612,929	271.15	57.76		4,004,543
1905 ...	109,398	504,960	32,657	11,919,957	300.86	64.67		4,061,258
1906 ...	111,494	511,900	31,680	11,563,244	286.84	61.89		4,090,890
1907 ...	114,049	521,000	34,157	12,467,384	302.89	65.56		4,301,213
1908 ...	116,781	532,200	33,626	12,307,201	291.35	63.18	7d. in the £	4,484,868
1909 ...	119,650	543,600	31,829	11,617,524	269.24	58.55		4,672,324
1910 ...	123,227	555,750	34,508	12,595,571	280.04	62.09		4,789,265

(vi.) *Total Cost of Construction, Revenue, Expenditure and Net Profits, 1854 to 1910.* The following table shews the total cost of construction, the revenue, expenditure, and net profits up to the 30th June, 1900, and for each financial year from 1901 to 1910 inclusive:—

MELBOURNE WATERWORKS.—CONSTRUCTION, COST, REVENUE, EXPENDITURE, AND NET PROFITS, 1854 to 1910.

Year Ended the 30th June.	Capital Cost.[1]	Annual Revenue.[2]	Annual Expenditure on Maintenance and Management.[3]	Percentage of Expenditure to Revenue.	Interest.[4]	Net Profit after Payment of Expenditure and Interest.
	£	£	£	%	£	£
Total to 1900	3,700,873	4,672,030	749,798	...	1,938,868	1,983,364
1901 ...	14,330	163,212	38,548	23.61	103,988	20,676
1902 ...	16,053	171,889	40,156	23.36	102,670	29,063
1903 ...	10,412	169,295	40,257	23.78	102,942	26,096
1904 ...	8,649	165,457	37,374	22.59	104,096	23,987
1905 ...	1,391	184,529	31,761	17.21	102,465	50,303
1906 ...	16,562	182,926	28,016	15.31	102,548	52,362
1907 ...	25,119	211,059	30,573	14.49	102,075	78,411
1908 ...	33,058	233,549	41,656	17.83	100,915	90,978
1909 ...	65,108	235,238	41,776	17.76	102,281	91,181
1910 ...	29,962	248,189	43,147	17.38	101,440	103,602
Total ...	3,921,517	6,637,373	1,123,062	...	2,964,288	2,550,023

1. Works commenced in 1853. 2. Revenue commences in 1854. 3. Returns for expenditure commence in 1859. 4. First interest paid in 1856.

8. **Melbourne Sewerage.**—As stated above, the chief object of the creation of the Melbourne and Metropolitan Board was to carry out an efficient system of sewerage. Old Melbourne used to be a city of cesspits, and it was not until the latter sixties that these were abolished, filled up, and the movable pan system gradually adopted throughout the whole metropolitan area with night removal. The cost of removal in 1894 was about £90,000, equal to a capital expenditure of £1,750,000. This objectionable system has been displaced by the water carriage system throughout a large portion of the metropolis, and in other parts the work of reticulation is now proceeding. A considerable part of central Melbourne is below the 10 foot contour and was originally full of swamps, which were sources of danger to the public health. All these swamps have now been filled up, and the abolition of the accumulations of stagnant water has effected a very great improvement in the health of the city and suburbs. The sewerage system is designed to carry off all water used in water closets, lavatories, baths, and urinals, together with all chamber slops and water used in cooking, washing clothes and floors, and from sinks in kitchens and sculleries, drainage from stables and cow houses, together with all liquid refuse, which in the opinion of the Board will not prejudicially affect the sewers, the machinery, or the sewage farm. Rainfall from the streets flows into the river and is not taken into the sewers, which are designed to provide for 30 cubic feet per head per day from the assumed future population, calculated on the basis of a population of 1,000,000 people ultimately settled on the areas now capable of being connected with the pumping station.

(i.) *Description of Sewerage Systems.* The whole of the sewage of the metropolis is being gradually collected by means of two principal main sewers and a subsidiary main leading to the pumping station at Spotswood.

The two main sewers are (*a*) *North Yarra System.*—The North Yarra sewer, which commences with Heidelberg (part of) and thence takes up East Kew, Preston, Coburg, Northcote, Brunswick, the Clifton Hill part of Collingwood, also Fitzroy and the North Carlton, North Melbourne, and Flemington and Kensington parts of Melbourne, together with Essendon and Footscray. (*b*) *South Yarra System.*—The Hobson's Bay main which starts with Moorabbin (part of), picking up Brighton, Caulfield, Malvern, St. Kilda, Camberwell, a small part of Nunawading, besides the remaining part of Kew, also Hawthorn, Prahran, South Melbourne, Port Melbourne, Richmond, the remaining part of Collingwood, also East Melbourne and other remaining parts of Melbourne. (*c*) The Subsidiary main, which takes in Williamstown and joins the Hobson's Bay main before it enters the pumping station.

On the 30th June, 1910, the sewerage system, including mains, branches, reticulation, and drains, had been practically completed in the following districts, viz.:—Port Melbourne, South Melbourne, Melbourne (except very small portions in Flemington and Kensington), Richmond, Prahran, and Collingwood, and very nearly the whole of Fitzroy and St. Kilda. Reticulation extensions had also been laid from time to time in various portions of above districts. A large portion of Brighton, Caulfield, Malvern, Camberwell, Kew, Hawthorn, Brunswick, Northcote, Essendon, Footscray and Williamstown had likewise been dealt with, also a portion of Moorabbin. During the past twelve months good progress has been made in the work at Essendon, Brunswick, and Moorabbin (part of), also to a less extent in Flemington and Kensington (Melbourne), Fitzroy, Camberwell, Malvern, and Brighton. Work is now proceeding rapidly in Moorabbin (part of), Brighton, the small part of Nunawading, also in Camberwell, Brunswick, Northcote, Fitzroy, and Williamstown.

The whole of the sewerage work still remains to be done in Heidelberg (part of), Coburg, and Preston, also a considerable portion in Williamstown, Footscray, Essendon, Northcote, Brunswick, Kew, Camberwell, Caulfield, and Moorabbin (part of). Besides the foregoing, about half of the Malvern district, with smaller portions in Brighton and Hawthorn, and very small portions in Flemington and Kensington (Melbourne), Fitzroy St. Kilda, and Nunawading (part of), yet require completion.

In all, 114¼ miles of main and branch sewers and 1091⅛ miles of reticulation sewers have been completed. There were also 1628⅛ miles of house connections drains laid (7½ miles of cast iron and 1620⅝ miles of vitrified stoneware pipes), under the supervision of the Board, or a total altogether of 2833½ miles of mains, branches, reticulation sewers and house connections drains connected with the Spotswood Pumping Station.

The whole system was so far advanced on the 30th June, 1910, that on that date the sewage from 112,809 tenements could be collected. Of these, 105,993 tenements were connected, together with 41 public conveniences and 62 public urinals, 120,171 water closets, 85,383 baths, 64,577 sinks, 57,397 sets of wash troughs, 27,759 lavatories, 11,908 stables, 7290 urinals, 4463 polluted areas and paved yards, 1726 cellars, 921 slop hoppers, 263 latrines, and 233 dairies.

When collected at Spotswood the sewage is raised 125 feet to the head of the outfall sewer, through 2¾ miles of 6-feet and 4-feet wrought-iron rising mains, from whence it gravitates to the farm in a partly-open and partly-closed channel 15⅜ miles long, eleven feet in diameter, and having a grade of two feet to the mile.

(ii.) *Metropolitan Sewage Farm.* The farm contains 8847 acres, situated on the western side of the Werribee River. The price paid for the land was £17 10s. per acre. About £297,000 has been spent on the property in perfecting the arrangements for the distribution of sewage. The cost of the farm to the 30th June, 1910, was £452,678. About 26,607,927 gallons of sewage have to be disposed of every twenty-four hours in irrigating the fields. It is spread over properly-prepared blocks of land by a series of mains and lateral carriers. The effluent, after filtering through the land, is discharged into Port Phillip Bay in a clear and transparent condition, all the sewage held in suspension being left in the soil. The main supply channels for carrying the sewage on to the fields are about ten chains apart, and a good system of open drains to carry off the surplus water is provided. Many of these drainage channels are ten feet to twelve feet wide at the top and seven feet deep, and through them the water drained off from the subsoil is constantly flowing to the bay. The prepared blocks on the farm are laid down with prairie grass and lucerne, on which sheep are depastured. During the financial year 1909-10, 22,893 sheep were bought, at a cost of £11,992, other expenses amounting to £4294. During the same period the total receipts from the sale of wool, skins, and 32,128 sheep amounted to £31,289. The profit on sheep for the year amounted to £8446.

(iii.) *House Connections.* The work of house connections with the sewerage system is carried out under a carefully prepared by-law. Under the Amending Act of 1897, after a property has been declared to be a sewered property, the owner has several options. (*a*) He may submit a plan of his house connections for approval, and on approval being given, may agree to carry out the work within one month. (*b*) He may submit a plan, which, if approved of, he may ask for an estimate of the cost of carrying out. This the Board is bound to supply, and then the owner may either carry out the work himself or ask the Board to carry out the work, which it must do for the estimated price, whether the work costs less or more. (*c*) On default of the owner the Board may carry out the work, and at the request of the owner accept payment by forty quarterly instalments, bearing interest on such portion as from time to time remains unpaid at the rate of 5 per cent.

(iv.) *Number of Houses Connected, Capital Cost, Revenue and Expenditure, 1901 to 1910.* The following table gives particulars as to the number of houses connected to the sewerage system, the total capital cost, and the receipts and disbursements during each year from 1901 to 1910 inclusive:—

MELBOURNE SEWERAGE WORKS.—TENEMENTS CONNECTED, CAPITAL COST, RECEIPTS AND DISBURSEMENTS, 1901 to 1910.

Year ended the 30th June.	Number of Houses Connected.	Capital Cost.	Receipts.*			Maintenance and Working Expenses.
			From Rates.	From other Sources.*	Total.	
	No.	£	£	£	£	£
1901 ...	38,696	3,307,135	109,790	5,268	115,058	24,582
1902 ...	47,029	3,609,596	119,222	5,474	124,696	24,396
1903 ...	55,727	3,921,208	141,994	6,647	148,641	26,590
1904 ...	64,487	4,214,812	154,857	6,174	161,031	26,696
1905 ...	71,689	4,639,949	165,500	5,948	171,448	26,906
1906 ...	79,597	4,980,335	185,803	6,715	192,518	28,828
1907 ...	87,853	5,258,156	209,805	6,431	216,236	33,296
1908 ...	94,067	5,520,303	221,953	4,656	226,609	35,939
1909 ...	99,955	5,741,203	233,595	8,701	242,296	38,016
1910 ...	105,993	6,025,030	241,853	11,903	253,756	42,921

* Excluding revenue from sale of sheep and from interest.

9. **Water Supply in Country Towns.**—By the Water Act 1905, which came into operation on the 1st May, 1906, the control and management of all Irrigation Trusts, with one exception, and of a number of waterworks and water supply districts were centralised, and their works and property vested in the State Rivers and Water Supply Commission, to whom many of the duties of the Water Supply Department were also handed over. Further information with regard to this Commission and to the works and districts under its control are given in the section in this book dealing with Irrigation and Water Supply. There are, however, in different parts of Victoria a number of other waterworks which are concerned chiefly with domestic supply, and which are controlled by local authorities, *i.e.*, by Waterworks Trusts or by municipal corporations. These works are constructed out of moneys either granted or lent by the general Government. The following table gives particulars as to the waterworks under the control of Trusts and municipal corporations for each year from 1904 to 1909 inclusive :—

VICTORIA.—COUNTRY WATERWORKS UNDER TRUSTS AND MUNICIPAL CORPORATIONS, 1904 to 1909.

Year	Waterworks Trusts.						Municipal Corporations.*			
	Number of Trusts.	Capital Cost.	Capital Indebtedness.	Interest Outstanding.	Receipts.	Expenditure.	Number of Corporations.	Capital Cost.	Capital Indebtedness.	Interest Outstanding.
	No.	£	£	£	£	£	No.	£	£	£
1904...	73	1,051,424	775,701	18,520	†	†	24	675,161	479,815	2,133
1905...	74	1,068,985	786,505	19,520	71,654	71,876	23	669,438	471,998	8,107
1906...	78	1,367,565	905,336	17,029	89,083	86,764	23	669,684	466,395	2,586
1907...	84	1,406,510	933,033	22,351	93,247	88,671	23	674,366	468,462	9,786
1908...	87	1,429,836	950,293	20,512	72,952	69,291	23	675,966	465,778	9,750
1909...	83	952,486	731,276	16,130	85,054	88,190	23	676,358	461,881	9,834

* Particulars as to the receipts and expenditure in respect of waterworks under the control of municipal corporations are not available. † Returns not available.

Under the provisions of the Local Government Act 1903 municipal councils are authorised to construct and maintain tanks, dams, and reservoirs, and must maintain existing works for the gratuitous supply of water. They are also empowered to accept the management and control of new waterworks within their respective localities, and

may, with the consent of the Governor, construct or purchase new works within or without their locality. Councils are also authorised to enter into contracts for the supply of water for any period not exceeding ten years with the owners of any waterworks. Every municipality may levy a special water rate for water supplied, or for the purpose of constructing waterworks or paying the interest on any loan contracted by the council for such purpose, but the amount of the rate must not exceed in any year the sum of two shillings in the pound, provided that a minimum sum of ten shillings may be fixed by the council to be paid in respect of any property at which water is supplied.

(i.) *Geelong Waterworks Trust.* The Geelong Municipal Waterworks Act 1907 provided for the constitution of a Municipal Waterworks Trust for the supply of water to Geelong and district. In January, 1908, the works were transferred to the Trust from the control of the State Rivers and Water Supply Commission, the amount paid by the Trust to the State being £265,000, which was raised by loan. The capital cost of the works at the date of transfer was £442,322. The available storage capacity of the reservoir is 642,207,000 gallons. The Trust is authorised to supply water to (*a*) the town of Geelong, (*b*) the suburbs thereof, including all places within five miles of the Geelong Post Office, and (*c*) any place within ten miles on either side of the main pipe from Stoney Creek to Geelong.

10. **Fire Brigades.**—Under the Fire Brigades Act of 1890 a metropolitan fire district and nine country fire districts were established, the former being placed under the control of a Metropolitan Fire Brigades Board, and the latter under the control of a Country Fire Brigades Board.

(i.) *Metropolitan Fire Brigades Board.* The metropolitan fire district originally comprised the area included in the several municipalities within a radius of ten miles from the Melbourne General Post Office, but this area has since been extended in certain directions so as to include the greater part of the Shire of Moorabbin and also the township of Mordialloc. The Board is composed of nine members, of whom three are appointed by the Governor-in-Council, three by the municipal councils, and three by the insurance companies. On the 31st December, 1909, the Board had under its control 50 stations, 200 permanent men, 160 auxiliary firemen, 10 steam fire engines, 4 gasolene engines, 2 chemical engines (1 motor), 2 petrol motor fire engines, 101,043 feet of hose, and 172 fire-alarm circuits having 507 street fire-alarms, of which 406 contained telephones. The total length of wire in use outside stations for fire alarms and telephones is about 342 miles.

(ii.) *The Country Fire Brigades Board.* This Board consists of nine members, of whom three are appointed by the Governor-in-Council, two are elected by the municipal councils of the districts where there are brigades registered under the Board, two by the fire insurance companies, and two by the registered fire brigades. At the end of the year 1910 there were eighty-nine municipal councils and fifty-five insurance companies included in the operations of the Act. All the brigades are volunteer brigades, but in the large towns permanent station-keepers and watchmen are employed. There were 101 registered brigades and 2041 registered firemen at the end of the year 1909; seven more brigades were about to be registered. At the same date the plant consisted chiefly of 5 steam engines, 62 manual engines, 10 horse brakes, 61 apparatus carriages, 3 fire escapes, and about 145,000 feet of canvas hose.

(iii.) *Financial Operations of both Boards.* The following table gives particulars as to the financial operations of both Boards during each year from 1904 to 1909 inclusive:—

VICTORIA.—REVENUE AND EXPENDITURE OF METROPOLITAN AND COUNTRY FIRE BRIGADES BOARDS, 1904 to 1909.

Particulars.	1904.	1905.	1906.	1907.	1908.	1909.
ORDINARY RECEIPTS.						
	£	£	£	£	£	£
Contributions	48,874	49,083	50,937	51,934	65,591	64,347
Receipts for services	692	754	551	1,336	2,833	2,908
Interest and sundries	2,814	3,442	3,080	3,116	2,562	1,649
Total	52,380	53,279	54,568	56,386	70,986	68,904
ORDINARY EXPENDITURE.						
Salaries	23,103	24,793	25,316	27,411	30,062	35,325
Fire expenses	2,936	2,990	3,041	3,201	3,080	3,107
Horses, quarters, etc.	9,207	10,930	9,596	9,986	12,894	11,636
Plant—Purchase and repairs ...	4,305	4,589	6,560	5,783	9,478	6,343
Interest	6,057	6,103	5,752	5,803	5,822	5,781
Sinking fund	2,250	2,250	2,250	2,895	2,895	2,250
Miscellaneous	4,332	2,108	4,310	2,884	5,610	5,072
Total	52,190	53,763	56,825	57,963	69,841	69,514
LOAN EXPENDITURE—						
Purchase of land, erection of buildings, etc.	...	405	3,250	2,623	244	3,203

11. **The Melbourne Harbour Trust.**—This Trust was constituted under an Act passed in 1876, as a result of public agitation and demands extending over a period of thirty-four years, to the effect that the cost of landing goods should be reduced, and the delays in receiving goods should be abolished. Both demands arose from the fact that vessels of a draught greater than twelve feet had to discharge in the bay into lighters.

(i.) *Constitution of the Trust.* The Harbour Trust Act was drafted on the lines of similar institutions in Great Britain, such as the Thames Conservancy, the Mersey Harbour Board and the Clyde Trust. Under the Act of 1876, as amended in 1883, the number of Commissioners is fixed at seventeen, nominated or elected as follows:—Five were nominated by the Governor-in-Council, three elected by merchants, three by shipowners, two were elected by the City Council, and one each by the ratepayers of South Melbourne, Port Melbourne, Williamstown, and Footscray. The sum of £1700 per annum was set aside for the remuneration of the Commissioners.

(ii.) *Works Undertaken by Trust in the River and in the Port.* In 1879 a report dealing with various propositions for the improvement of the port and harbour was issued by Sir John Coode, an English engineer, who had been engaged by the Commissioners for the purpose. This report which recommended (i.) the cutting of a new channel through the flats to the south of Fishermen's Bend, (ii.) the construction of a dock, and (iii.) the widening and deepening of the channel in the river, was adopted by the Commissioners, who were empowered in 1883 to borrow the amount of £1,000,000 for the purpose of carrying out the necessary works. In 1890 a Consolidating Act was passed, and the borrowing powers of the Trust were increased to £2,000,000. The river was widened from Queen's Bridge to the bay to about 300 feet, while the depth has

been gradually increased until at the present time it is twenty-six feet at low water. Three and a-half miles of wharfs have been constructed in the river at Melbourne.

(*a*) *The Coode Canal.* In 1886 the canal across the flats below Fishermen's Bend was completed at a cost of £96,000. The length of the canal is 2602 yards, the distance from Queen's Bridge to the river entrance being thereby reduced from seven miles to five and three quarter miles, and the navigation being greatly facilitated. At the present time this channel, which is called the Coode Canal is being widened 100 feet, which will make its total width 408 feet, and its width at low water 366 feet. The work of widening the canal is still in progress.

(*b*) *The Victoria Dock.* This dock, four miles up the river and opened in 1892, has an area of ninety-six acres and a depth of twenty-six feet at low water. The entrance to the dock is 160 feet wide. There are 8800 feet of wharfage, and the total cost, including wharves, sheds, and approaches thereto, was £416,038. The sheds have a total length of 12,000 feet, and cover an area of 568,070 square feet.

(iii.) *Works in the Bay.* Prior to 1889 all the mail steamers and vessels of heavy draught had to lie at anchor in the bay, and there discharge into lighters. One of the first works undertaken by the Commissioners was to make the railway piers at Williamstown available to these vessels. This work was completed at a cost of £256,160. In 1893 a channel over 8000 feet long and 600 feet wide was constructed, running in a southerly direction from Port Melbourne Railway Pier and having a navigable depth of twenty-eight feet. The cost of this work was £218,379.

(iv.) *Dredging.* The total quantity of material raised by the dredging and excavation done in the improvement of the river and bay amounts to about 39 million cubic yards. During the eleven years ending 31st December, 1910, the average cost of dredging per cubic yard was 2.57 pence and the cost of towing and depositing 3.55 pence, not allowing for depreciation of plant. The Trust has expended £224,970 in reclaiming land within its jurisdiction. The amount of material raised annually is now about 1,200,000 cubic yards.

(v.) *Financial Operations.* The revenue of the Trust is obtained from wharfages, and quayage rates, rents and license fees from lands and ferries, and other license fees. One-fifth of the revenue of the Trust is paid to the consolidated revenue of Victoria. The following table gives particulars of the revenue and expenditure of the Trust from 1905 to 1910 inclusive:—

MELBOURNE HARBOUR TRUST.—REVENUE AND EXPENDITURE, 1905 to 1910.

Particulars.	1905.	1906.	1907.	1908.	1909.	1910.
REVENUE.						
	£	£	£	£	£	£
Rates and rents	227,282	254,142	257,787	272,409	259,641	316,787
Interest	2,489	2,987	2,949	3,662	90	410
Recoups	2,174	2,535	5,542	1,068	3,082	2,138
Total	231,945	259,664	266,278	277,139	262,813	319,335

MELBOURNE HARBOUR TRUST.—REVENUE AND EXPENDITURE—(contd.)

Particulars.	1905.	1906.	1907.	1908.	1909.	1910.
EXPENDITURE.						
Wharfage refunds	1,054	796	783	1,161	997	1,618
Consolidated revenue of Victoria	45,164	51,204	51,565	53,869	51,612	62,604
Wharfage drawback	1,175	...	...	...	...	...
Maintenance and management	51,714	52,519	53,741	70,224	54,962	56,794
Interest on loans	86,630	86,530	86,375	81,413	72,517	69,409
Dredging (construction) ...	6,630	7,182	8,163	9,162	16,368	25,200
Wharf ,, ...	1,012	1,021	12,345	4,942	5,146	6,308
Harbour improvements ...	...	...	4,999	4,522	7,724	9,880
Plant account	...	...	11,310	13,753	11,887	860
Redemption of loans expenses ...	...	...	...	603	1,794	...
Total	193,379	199,252	229,281	239,649	223,007	232,673
PROFIT.						
Profit	38,566	60,412	36,997	37,490	39,806	86,662

§ 4. Queensland.

1. **Development of Local Government Systems.**—The first step in the direction of local government in Queensland was the incorporation of Brisbane as a municipality by proclamation on the 6th September, 1859, about three months prior to the separation of that State from New South Wales. The provisions of the Municipalities Act, which was passed in the mother colony in 1858, and which has already been referred to, applied to settlement in the Moreton Bay district, and were amended by an Act of the Queensland Government in 1861. Three years later the provisions of these two Acts were amended and consolidated, and authority was given for the incorporation as a municipality of any city or town, or of any rural district, on petition to the Governor signed by at least 100 resident householders. The duties and powers of the councils were extended and additional privileges were conferred under this Act.

(i.) *Inauguration of General System of Local Government.* Various amendments were made in the law from time to time, without, however, altering the main features of the Act of 1864, until the year 1878, when the Local Government Act was passed, amplifying the powers of municipalities, and providing for the incorporation of rural areas as shires. The provisions of this Act, which was adopted from the then new Local Government Act of Victoria, were found to be unsuited to the requirements of a large and sparsely populated country like Queensland, and were not applied to any new area. The Act was therefore only of practical value to a few of the existing municipalities. In 1879 the Divisional Boards Act was passed. This Act was intended to provide for local government outside the boundaries of municipalities, and was applied simultaneously by the Executive to about 660,000 square miles of territory, which was divided, by proclamation, into seventy-two divisions, some of them of immense area and carrying only a very small population. The Act provided for a free grant to any division equal to one shilling in the pound of the annual value, and also for endowment to the amount of £2 for every £1 of rates collected for a period of five years. In case of the failure of the people of any division to elect the first members of their Board, the appointments were made by the

Governor-in-Council. On the 30th April, 1880, a Gazette was issued first announcing the names of the elected Boards, and then appointing the members of the nominated Boards.

In 1881 and 1887 the Divisional Boards Act was amended, and by a further amending Act, passed in 1890, the rates thenceforward were to be charged on the unimproved capital value of the land, and this system has since been retained. In 1896 a commission was appointed to enquire into the working of the Local Government Acts and to recommend amendments which might be considered desirable; a report subsequently sent in by this commission recommended that increased powers of local government should be granted in certain matters, and to the report was appended a draft bill which, with certain alterations and curtailments, became the Local Authorities Act of 1902, the provisions of which, together with the amendments in 1903 and 1905, now regulate generally the working of local areas within the State.

(ii.) *The Local Authorities Act 1902 and 1910.* Considered generally, these Acts comprise the Local Government Act 1878, and amending Acts, together with the Divisional Boards Act of 1887, the Valuation and Rating Act of 1890, and the Local Authorities (Joint Action) Act of 1886. They do not, however, comprise all the statutes relating to the powers and duties of local authorities, for certain Acts, such as the Tramways Acts and the Health Acts, while conferring powers upon these bodies, deal also with other subjects, and are in the nature of general Acts upon these subjects. The Act of 1902 contains a number of provisions enlarging the powers of local bodies and rendering their duties more explicit; thus the jurisdiction of councils with respect to roads, bridges, wharves, ferries, and reserves is amplified, and provision is inserted for putting under their control, when circumstances warrant it, such public lands as cemeteries, commons, foreshores, and the like. They have enlarged powers as to traffic, the eradication of noxious weeds, the reclamation of lands, the destruction and prevention of pests, the construction of buildings, the prevention of fires, and the control of places of public resort and amusement. They are empowered to establish works for lighting, etc., and to construct tramways in districts and under circumstances to which the existing Tramways Acts are not readily applicable. The proper execution of all these matters requires additional rating, and provision is made therefor in the Act.

2. **Systems of Local Government now in Operation.**—The principal features of previous enactments as to the division of the State into local areas are retained in the Acts of 1902 and 1910, but such areas in the future are to be of two classes—(*a*) towns and (*b*) shires. All municipalities formerly constituted as boroughs become towns, except Brisbane, Rockhampton, and Townsville, which are declared to be cities, and all shires and divisions become shires. The Governor-in-Council may, after giving notice in the *Gazette*, constitute, unite, divide, or abolish areas for the purpose of forming new areas, and may by proclamation constitute a town a city.

(i.) *The Municipal Council.* All local areas are governed by councils, the members of which are called aldermen in the case of towns and councillors in the case of shires. *Town councils* are composed of either seven, nine, or eleven members, as declared by Order-in-Council, but if the town has wards three members are assigned to each ward. *Shire councils* are composed of five, seven, or nine members, as declared by Order-in-Council, but if the shire is divided the number cannot be more than three for each division, and need not be the same for every division.

(ii.) *Qualification of Aldermen and Councillors.* Every male ratepayer of the age of twenty-one years, if a natural-born or naturalised subject, is qualified to be elected as a member of a council, unless he is an uncertificated insolvent, is undergoing imprisonment, is (subject to certain exceptions) financially interested in any contract with the council, or is insane. Provision is made for the election of the mayor or chairman, and for the retirement of members by rotation. The first council of a newly constituted town is elected, but that of a newly constituted shire is appointed by the Governor-in-Council, unless otherwise directed by the order constituting the shire.

(iii.) *Qualification of Voters.* Generally every person of either sex of the age of twenty-one, who is a natural-born or naturalised subject, and is rated as an occupier or owner of ratable land, is entitled to vote. The number of votes depends upon the value of the land in the following scale:—

QUEENSLAND MUNICIPALITIES—PLURALITY OF VOTES.

Value of land ...	Less than £500.	From £500 to £1000.	£1000 and upwards.
Number of votes ...	1	2	3

In case of joint owners or occupiers, each is to be considered the owner or occupier of land of a value equal to that of the whole divided by the number of owners or occupiers not exceeding three. If more than three persons are joint owners or occupiers, those whose names stand first on the rate book or valuation or return are to be taken. Companies may nominate their secretaries, managers, or directors for the purpose of voting.

(iv.) *Powers and Duties of Councils.* Generally the council is charged with the construction, maintenance, and management of all roads, streets, bridges, culverts, ferries, wharves, jetties, and other necessary public works, and is invested with powers to acquire land and buildings in connection with a variety of public works and for a number of public purposes. The council also has general power to make by-laws with a view to the good government of the local area under its management. Authority is given to the councils to establish markets and weighbridges and to fix dues for the use of the same; to undertake the manufacture or supply of light or hydraulic or other power; to destroy noxious weeds; and to control the erection of new buildings and the repair of dangerous or neglected ones. The council may also make by-laws with respect to a multitude of matters mentioned with great particularity in a schedule to the Act, and may also exercise various powers conferred by a number of Acts, set forth in the second schedule, such as the Tramways Act 1882, the Water Authorities Act 1891, the Electric Light and Power Act 1896, and the Health Act 1900.

(v.) *Valuation.* All land is ratable except the following:—Crown land unoccupied or used for public purposes; land in the occupation of the Crown, but this does not include lands rented in towns by the Crown; land used for public purposes; commons; cemeteries; and land not exceeding in area fifty acres and used exclusively for public worship, educational purposes, an orphanage, or library. Generally the value is estimated at the fair average value of unimproved land of the same quality held in fee-simple in the same neighbourhood. In the case of land held under gold-mining lease, or under lease from the Crown, the value is deemed to be a sum equal to twenty times the annual rent.

(vi.) *Rates* are levied on the unimproved capital value, and are of two kinds, general and special. *The general rate* must not be greater than sixpence in the pound, nor less than a half-penny, while *special rates* must not exceed threepence in the pound, but this provision does not include separate rates, special water rates, loan rates, cleaning rates, or tramway rates. Special rates may be levied for the purpose of constructing and maintaining permanent works, while separate rates may be declared for defraying expenses incurred in the execution of a work for the special benefit of any particular part of the area. A special rate may also be levied for the administration of the Health Acts.

(vii.) *Loans.* Money may be borrowed by local authorities either from the central Government, from outside sources by means of debentures, or by way of overdraft of current account. (*a*) *Government Loans.* The total amount that may be advanced by the Treasury, inclusive of sums owing, may not exceed a sum equal to five times the then ordinary annual revenue of the local authority, except in the case of loans for reproductive undertakings, for which special arrangements may be made by application to the Governor-in-Council. Notice of a proposed loan must be published, and, if demand be made by any ratepayers, having in the aggregate twenty votes, a poll must be taken to decide whether the money shall be borrowed or not. (*b*) *Debentures.* A local authority

may apply to the Governor-in-Council for permission to borrow money by the sale of debentures, but application must only be made after a resolution for borrowing the money has been adopted and confirmed, and after an opportunity has been given for the taking of a poll on the question, and (if a poll has been taken) when the result is in favour of the loan. (*c*) *Temporary Loans* from banks may be made by way of overdraft of the current account, but no such overdraft may exceed the ordinary revenue of the local authority in the year then last past.

(viii.) *Tramways.* Any ratepayers, having not less than one-third of all the votes of the ratepayers within any particular area, may by petition request the local authority to apply to the Governor-in Council for the constitution of such area as a "tramway area." After an opportunity for taking a poll on the question has been given, and (if a poll has been taken) when the result is in favour of the tramway, the petition may be granted by the Governor, who may authorise the issue of a Government loan for the purpose of constructing or for purchasing the tramway. The total amount advanced for the purpose must not exceed £3000 for every mile constructed. As regards the repayment of tramway loans, the local authority may levy a tramway rate, and the provisions of the Local Works Loans Acts 1880 to 1889 are incorporated. Up to the end of the year 1907 tramways had been constructed under these provisions in seven shires, their total length being 161 miles. In some cases these lines are run by the Queensland Railway Commissioner on behalf of the constructing authority. Particulars as to the working of tramways run by local authorities are given in the section in this book on "Roads and Railways." (See pp. 746-7 hereinbefore.)

3. **Area, Population, Number of Dwellings, Rates, Assets and Liabilities of Cities Towns, and Shires, 1905 to 1909.**—The following table gives particulars of the area, population, number of inhabited tenements, assets and liabilities of cities and towns and of shires, for each year from 1905 to 1909 :—

QUEENSLAND.—PARTICULARS OF CITIES AND TOWNS AND OF SHIRES, 1905 TO 1909.

Year.	Municipality.	Area.	Population.	Number of Inhabited Dwellings.	Capital Value.	Assets.	Liabilities.		
							Government Loans.	Other.	Total.
		Square Miles.	No.	No	£	£	£	£	£
1905	Cities and Towns	354	224,672	42,857	14,409,576	1,272,911	302,838	678,835	981,673
	Shires	667,898	290,576	64,844	27,948,597	250,052	134,894	33,798	168,692
	Total ...	668,252	515,248	107,701	42,358,173	1,522,963	437,732	712,633	1,150,365
1906	Cities and Towns	354	227,106	43,457	13,980,737	1,292,040	330,515	656,569	987,084
	Shires	669,901	306,212	68,211	29,197,808	254,363	113,550	45,199	158,749
	Total ...	670,255	533,318	111,668	43,178,545	1,546,403	444,065	701,768	1,145,833
1907	Cities and Towns	354	231,861	43,864	13,840,010	1,296,743	325,685	637,196	962,881
	Shires	669,901	318,336	66,984	29,977,860	259,519	100,951	44,525	145,476
	Total ...	670,255	550,197	110,848	43,817,870	1,556,262	426,636	681,721	1,108,357
1908	Cities and Towns	354	236,388	45,430	13,745,293	1,372,525	279,194	745,300	1,024,494
	Shires	669,901	333,619	70,294	31,279,792	277,086	111,754	52,908	164,662
	Total ...	670,255	570,007	115,724	45,025,085	1,649,611	390,948	798,208	1,189,156
1909	Cities and Towns	384½	241,795	45,365	13,637,273	1,366,435	253,391	815,540	1,068,931
	Shires	669.870½	344,752	74,380	33,677,538	301,976	111,740	53,643	165,383
	Total ...	670,255	586,547	119,745	47,314,811	1,668,411	365,131	869,183	1,234,314

4. **Receipts and Expenditure of Cities, Towns, and Shires, 1905 to 1909.**—The following table shews the receipts and expenditure (including loan moneys) of cities and towns and of shires, as well as the total receipts and expenditure of all municipalities, for each year from 1905 to 1909 :—

QUEENSLAND.—REVENUE AND EXPENDITURE OF CITIES, TOWNS, AND SHIRES, 1905 TO 1909.

Year.	Municipality.	Receipts.				Expenditure.				
		From Government.	From Rates.	From other Sources.	Total.	On Public Works.	Loan Redemption.	Office Expenses and Salaries.	Other Expenses.	Total.
		£	£	£	£	£	£	£	£	£
1905	Cities and Towns	5,071	216,283	91,156	312,510	175,279	62,988	24,906	58,473	321,646
	Shires	10,028	161,198	19,612	190,838	107,934	18,778	32,753	20,992	180,457
	Total ...	15,099	377,481	110,768	503,348	283,213	81,766	57,659	79,465	502,103
1906	Cities and Towns	4,699	217,168	62,571	284,438	161,149	28,143	24,006	72,541	285,839
	Shires	6,915	170,617	20,818	198,350	131,571	23,211	33,359	27,580	215,721
	Total ...	11,614	387,785	83,389	482,788	292,720	51,354	57,365	100,121	501,560
1907	Cities and Towns	10,824	226,948	52,037	289,809	173,887	13,651	24,303	73,198	285,039
	Shires	5,813	187,397	26,249	219,459	141,252	12,594	34,311	31,500	219,657
	Total ...	16,637	414,345	78,286	509,268	315,139	26,245	58,614	104,698	504,696
1908	Cities and Towns	11,352	233,622	57,550	302,524	196,754	17,596	25,014	71,788	311,152
	Shires	23,646	202,722	30,146	256,514	187,346	12,281	33,810	37,251	270,688
	Total ...	34,998	436,344	87,696	559,038	384,100	29,877	58,824	109,039	581,840
1909	Cities and Towns	25,355	247,433	66,138	338,926	146,721	17,459	24,668	129,108	*317,956
	Shires	16,648	222,536	32,235	271,419	152,700	13,332	37,585	46,573	†250,190
	Total ...	42,003	469,969	98,373	610,345	299,421	30,791	62,253	175,681	568,146

* Exclusive of £13,141 interest on loans from Government. † Interest on Government loans (£4620) not included.

5. **The Metropolitan Water and Sewerage Board.**—This Board was constituted by the Metropolitan Water and Sewerage Act 1909, which divested the then existing Water Board of its powers and duties and vested them in an extended form in the new Board. The Act further empowers the Board to carry out a sewerage and drainage system, and relieves the Local Authorities of their responsibilities in that matter. The district of the new Board will comprise the cities of Brisbane and South Brisbane, the towns of Hamilton, Ithaca, Toowong, and Windsor, and the shires of Balmoral (except division 3), Coorparoo, Enoggera (except division 3), Sherwood (except division 1), Stephens, Taringa, and Toombul.

The Board consists of nine members, viz., the president and eight elected colleagues.

(i.) *Brisbane Water Supply.* The supply is derived from the upper reaches of the Brisbane River, and from two storage reservoirs, known respectively as the Enoggera and the Gold Creek reservoirs. For some years after the constitution of Brisbane as a municipality in 1859, the city supply was drawn from a chain of water-holes and sold to the residents. This scheme was later superseded by another under which water-carriers were licensed. Later, again, the Board of Water Supply was constituted, and the

construction of the Enoggera reservoir by the damming of Ithaca Creek was commenced 1864 and completed in August, 1866. This was followed in 1885 by the construction of the Gold Creek reservoir, which provided an improved service and better water. In April, 1892, the works at Mount Crosby, at the head of the Brisbane River, were completed. At these works the water is pumped to a reservoir 455 feet above Brisbane high-water mark, whence it is delivered to the city by gravitation. Works for increasing and purifying the water supply of Brisbane are to be carried out in the near future.

(ii.) *The Brisbane River Supply.* This is the principal source of supply, about 60 per cent. of the water used being taken from it. The catchment area above the pumping station is about 4000 square miles. The Mount Crosby service reservoir, into which the water is pumped from the river, is built in cement concrete, and is 267 feet long, 100 feet wide, and 15 feet deep from high-water line, which is 455 feet above high-water mark at Brisbane. The capacity is about 2,500,000 gallons. The outlet pipe is thirty-four inches in diameter, and leads through the valve-house to the gravitation main to Brisbane, 17¾ miles long and twenty-four inches in diameter. At Kenmore, eleven miles from Mount Crosby, a junction is effected between this 24-inch main and the 16-inch main from Gold Creek.

(iii.) *The Enoggera Reservoir.* The Enoggera are the oldest works now in use, and are distant from Brisbane about eight miles by road. The catchment area is nearly thirteen square miles in extent, and the reservoir, which is formed by an earthen dam, holds 1,000,000,000 gallons, of which 600,000,000 are available by gravitation. The greatest length of the reservoir is 2600 yards, and its greatest breadth 700 yards. There are two lines of pipes from the reservoir to Brisbane—sixteen inches and twelve inches in diameter. The total carrying capacity of these pipes is about 2,600,000 gallons a day.

(iv.) *The Gold Creek Reservoir.* This reservoir is situated in the upper waters of Gold Creek, a branch of Moggil Creek, distant from Brisbane by road about thirteen miles. The supply is drawn from a catchment area adjoining that of Enoggera, and comprising an area of nearly four square miles. The total capacity is about 406,000,000 gallons, of which 400,000,000 gallons are available. The diameter of the service main is sixteen inches, the distance from the valve house to Brisbane being 12½ miles. The greatest length of the reservoir is 1650 yards, and its greatest breadth 682 yards.

(v.) *Service Reservoirs.* (*a*) *Highgate Hill Reservoir.* This reservoir was constructed in 1889 to supply parts of South Brisbane. Its capacity is 2,176,000 gallons. To fill this reservoir, and in order to ensure a good water supply to the south side generally, an inverted syphon, sixteen inches in diameter, was laid under the Brisbane River between Toowong and West End in 1889. The syphon is 800 feet long, and is connected with both the Mount Crosby and Gold Creek mains. (*b*) *Wickham Terrace Reservoirs.* Two service reservoirs are constructed on Observatory Hill, Wickham Terrace, for the supply of the lower parts of North Brisbane. They are supplied from the Enoggera reservoir through a 12-inch main, the water being aerated as it enters into the reservoirs, which together hold 570,000 gallons. (*c*) *Bartley's Hill Reservoir.* This reservoir was built in 1907 to increase the supply to the Hamilton, Clayfield, and Nundah districts. Its capacity is 1,367,256 gallons, top water level 250 feet above high-water spring tides. It is supplied from the Mount Crosby reservoir through a 12-inch main. It is roofed over, and fitted with louvres for ventilation.

(vi.) *Brisbane Waterworks: Cost, Revenue, Expenditure, and Interest, 1901 to 1910.* The subjoined table gives particulars as to the cost, the revenue and expenditure, and

the amount of interest and loan redemption during each year from 1901 to 1910 inclusive:—

BRISBANE WATERWORKS—COST, REVENUE, EXPENDITURE, INTEREST AND REDEMPTION OF LOANS, 1901 to 1910.

Year.	Capital Cost.	Revenue from Rates and Sales of Water.	Working Expenses.	New Work Construction.	Interest and Redemption of Loans.
	£	£	£	£	£
1901	694,973	60,120	17,462	7,535	42,426
1902	711,178	60,917	19,305	18,168	26,716
1903	727,311	62,435	18,917	17,429	26,716
1904	740,618	63,338	23,888	13,244	26,716
1905	751,477	65,584	25,606	10,860	26,716
1906	*774,921	67,280	19,255	23,444	26,716
1907	792,264	69,709	20,025	17,343	26,716
1908	811,055	69,493	22,125	18,791	26,716
1909	825,812	69,736	25,246	14,756	26,716
1910	867,837	72,006	26,097	42,025	27,754

* The book value of the works at the end of 1907 was £569,770, the difference being amounts written off for depreciation, losses through floods, or the removal of smaller mains.

(vii.) *Brisbane Waterworks: Length of Mains, Tenements and Population Served, and Water Consumption, 1901 to 1910.* The following table shews the length of mains, the number of tenements connected, the population supplied, the total quantity of water supplied, the average daily supply, and the average daily supply per head of population supplied during each year from 1901 to 1910 inclusive:—

BRISBANE WATERWORKS.—PARTICULARS, 1901 to 1910.

Year.	Length of Reticulation Mains.	Number of Tenements Connected.	Estimated Population Supplied.	Quantity Supplied.	Average Daily Supply.	Average Daily Supply per Head of Estimat'd Population.
	Miles.	No.	No.	,000 Gallons.	Gallons.	Gallons.
1901 ...	198	15,652	78,260	1,536,260	4,208,931	55
1902 ...	216¾	17,346	86,730	1,499,674	4,108,696	47
1903 ...	229¼	17,435	87,175	1,413,722	3,873,211	44
1904 ...	240½	17,814	89,070	1,686,845	4,621,493	52
1905 ...	250½	18,855	94,275	1,749,820	4,794,028	51
1906 ...	264	19,223	96,115	1,630,899	4,468,216	46½
1907 ...	280¼	20,050	100,250	1,777,333	4,869,406	48⅛
1908 ...	296½	20,365	101,825	1,620,057	4,438,514	43⅝
1909 ...	308¼	21,560	107,800	1,673,287	4,584,351	42½
1910 ...	360	22,830	114,150	1,776,734	4,867,766	42½

The total length of the trunk mains is 52½ miles.

Particulars relating to the sewerage system of Brisbane are not available.

6. **Country Towns Water Supply, 1909.**—In addition to the city of Brisbane there were at the end of the year 1909 twenty-two towns in Queensland provided with water supply systems, constructed by municipalities chiefly from Government loans. The subjoined statement gives particulars of all the water supply systems—exclusive of Brisbane—for the year 1909 :—

QUEENSLAND.—PARTICULARS OF COUNTRY WATER SUPPLY SYSTEMS, 1909.

		£			£
Cost of construction		667,098	Expenditure	Office and salaries ...	9,542
Receipts	Rates and sales of water	67,395		Construction ...	23,175
	Other	19,633*		Maintenance ...	27,854
				Interest & redemption	28,544
	Total	754,126		Total ...	89,115
Assets		557,264	Liabilities		449,381

* Including £18,470 from Government loans.

7. **Fire Brigades.**—In the year 1909 there were twenty-six fire brigades organised in various towns in Queensland. The revenue of these brigades is derived chiefly from grants from the Government, from municipalities, and from the insurance companies, generally in equal proportions. The following table gives particulars for the year 1909 for the seventeen fire brigades from which returns were received :—

QUEENSLAND.—FIRE BRIGADES, 1909.

Receipts.	Amount.	Expenditure.	Amount.
	£		£
From Government	4,550	Salaries and wages	7,428
„ Local authorities ...	4,473	Building, repairs, etc.... ...	1,571
„ Insurance companies ...	4,374	Plant, stores, clothing, etc. ...	2,617
„ Other sources	878	Other	1,906
Total	14,275	Total	13,522

At the end of the year 1909 the fire brigades staffs comprised 44 permanent men, 365 partly paid, and 37 volunteers. The metropolitan brigade at Brisbane and the South Brisbane brigade protect an area of 9½ square miles; their joint staffs comprise 52 men. They have three steam engines, seven hose carts, and 16,200 feet of hose. There are 45 telephone fire alarms and 63 call points.

§ 5. South Australia.

1. **Development of Local Government Systems.**—In the latter part of 1839 the first municipal law was passed in South Australia, which was thus the birthplace of municipal government in the Commonwealth. On the 31st October, 1840, the principles of self-government were practically adopted in Adelaide by the election of a mayor and council, consisting of nineteen members, and the system has since been extended throughout the settled parts of the State by the formation of district councils and municipal corporations, which are the two types of local authorities now in existence.

2. **District Councils.**—The first District Councils Act was passed in 1858, was amended in 1862, and was further amended and consolidated by the District Councils Act of 1876, which provided for the continuation of existing districts and for the establishment of new ones by proclamation on the petition of the ratepayers. The revenue of the councils consisted of rents, profits, and income from lands vested in the council or over which the council had the control and management; fines and penalties enforced under the Act; fees for licenses; and general and special rates and loans. Provision was made for the election of councillors, their number, qualification, and retirement; for the election of auditors; the meetings, powers and functions of councils; the appointment of constables; revenue and expenditure; assessment and rates; and for making by-laws for various purposes. The Act of 1876 was amended from time to time, and was finally amended and consolidated by the Act which is now in force, namely, the District Councils Act 1887, which has in turn been amended in the years 1899, 1890, 1897, 1904, and 1905. These Acts were again amended by the Local Government Act, 1910.

(i.) *The District Councils Act 1887* provides for the continuation and amalgamation of existing districts and for the constitution as a new district of any part of the State containing rateable property capable of yielding upon a rate not exceeding one shilling in the pound the sum of £200. The Governor is authorised to alter the area or boundaries of any district by annexation or by subdivision. New districts are constituted upon petition to the Governor; every petition must be signed by fifty inhabitants of the part sought to be constituted, and if the proposed district comprises portion of a previously existing district, by a majority of the ratepayers of such portion.

(*a*) *Qualification of Councillors.* Every male ratepayer, if of full age, is qualified to be a councillor, unless he is a minister of religion; a stipendiary magistrate, an uncertificated insolvent, or is the treasurer or a paid official of the district council, or is interested in any contract, except for advertisements and printing, with the district council. The chairman is elected by the councillors from their own number.

(*b*) *Qualification of Electors.* Every person of either sex, if of the age of twenty-one years, whose name appears as a ratepayer in the assessment book is entitled to vote at the elections of councillors and auditors. In case of a joint tenancy or a tenancy in common, only one person is entitled to a vote for every £75 or part thereof at which the property is assessed.

(ii.) *Assessment and Rates.* Assessments are generally made at four-fifths of the gross annual rent at which the property would let for a term of seven years, or at 5 per cent. on the capital value, but in case of land within a township, not less than twenty acres in area, and not built on, used, or divided by roads, assessment is made at the rate of 2½ per cent. on the value of the fee-simple. All other township land unbuilt on is assessed at 5 per cent. on the fee-simple value, and for lands held under mining lease from the crown, the assessment may not exceed the annual rental. (*a*) *General Rates* may not be more than one shilling and sixpence nor less than threepence in the pound on the assessed value. (*b*) *Special Rates* for the execution of permanent works may also be declared, provided that the general and special rates together do not exceed two shillings and sixpence in the pound. No special rate may be declared without the consent of the ratepayers to be obtained at a meeting called for the purpose, and any six ratepayers may demand a poll to be taken on the subject. The ratepayers of any portion of a district may memorialise the council for specific works for the benefit of such portion of the district, and if the council decide to comply with the memorial a *separate rate* may be levied in respect of property in the portion defined. Lighting rates may also be declared, but must not exceed fourpence in the pound.

(iii.) *Loans.* Any council may, for the execution of any works for which a special or separate rate has been declared, borrow on the security of such rate up to ten times the amount which at the time of borrowing would result from a rate of one shilling in the pound, but if demand be made by any twenty ratepayers, the question whether or not the proposed loan be incurred must be submitted to a poll of the ratepayers. The interest payable on any such loan must not exceed 6 per cent. By an amending Act passed in the year 1904, additional borrowing powers were conferred on the councils for the purpose of carrying out permanent works subject to the conditions that the total amount borrowed must not at any time exceed three times the amount which would result from a rate of one shilling in the pound, and that the principal sum and interest must be repaid by means of a sinking fund within forty-two years.

(iv.) *Revenue and Expenditure.* The revenue of the councils consists of rents profits and income from property vested in the council or over which the council has control; the proceeds from the sale of such property; fines and penalties imposed under the Act; fees for licenses; rates; and main road subsidies. Under the District Councils and Corporation Subsidy Act 1890 provision is made for grants out of the general revenue to district councils and corporations in lieu of fees received under the Auctioneers Act 1862 and the Licensed Victuallers Act 1880. The amount of such grant is a sum equal to five shillings in the pound on the amount collected from general rates not exceeding one shilling in the pound declared during any one year. Revenue may be expended in carrying out any authorised works; in payment of salaries and professional fees; in subscriptions to charities; in payment of councillors' travelling expenses; in promoting bills before Parliament, and generally in carrying out the purposes of the Act.

(v.) *Powers and Duties of Councils.* A council may carry out certain permanent works which are defined in the Act, and which comprise the following:—The construction of new streets and roads, sewers and drains; the construction or purchase of waterworks, district offices, pounds, abattoirs, markets, baths, hospitals, and other charitable institutions; the providing of libraries, museums, and places of public recreation; and the construction of tramways and machinery for the treatment of refuse. The councils are invested with wide powers to make by-laws for the more effective exercise and discharge of their powers, duties, and liabilities, particularly in respect of the following matters:—The compulsory purchase of land; manufacturing districts; the public health; the sale of food and drugs; the management of unoccupied waste lands of the Crown; drainage; piers, jetties, and wharves; weights and measures; vermin destruction; game and fisheries; streets, roads, and public places; fire brigades; impounding; and for fixing penalties for breaches of such by-laws. Upon the district councils is also imposed the duty of administering the Health Acts, the Sale of Food and Drugs Acts, the Game and Fisheries Acts, the Vermin Acts, the Bush Fires Act, the Impounding Act, the Weights and Measures Act, and the Slaughter House Act.

3. **Municipalities** were first established under the Municipal Corporations Act of 1861, which, after providing for the extension of the powers and duties of the Corporation of the City of Adelaide, authorised the Governor, on petition of a majority of not less than two-thirds of the property-owners, to incorporate any town, district, or place within the province, a municipality. This Act and its amendments were consolidated in the Municipal Corporations Act of 1880, which was amended from time to time until the year 1890, when it was repealed and its provisions consolidated by the existing Act, the Municipal Corporations Act of 1890, which was in turn amended in 1893, 1896, and 1903. These Acts were again amended by the Local Government Act, 1910.

(i.) *The Municipal Corporations Act, 1890.* After making provision for continuing existing corporations and by-laws the Act authorises the Governor to constitute new

municipalities, or to alter the boundaries of existing ones, on petition of not less than two-fifths of the ratepayers or owners of ratable property within the land proposed to be incorporated, separated, or added; and also to rearrange, increase or diminish the number of wards of a municipality on petition of not less than one-fifth of the ratepayers. Each council consists of a mayor, and of two councillors for each ward, and the provisions as to their qualifications are substantially the same as in the case of district councils referred to above. All persons of full age, if British subjects and not in receipt of public relief or alms, who are either owners or occupiers of any ratable property within a municipality are entitled to vote at the election of the mayor and councillors. Provision is made for the nomination and election of the mayor, councillors, and auditors, and for regulating the meetings of the councils.

(ii.) *Functions of Municipal Councils.* All public streets and roads are vested in the council of the municipality in which they lie, but no street can be declared a public street after the passing of the Act unless it is at least forty feet wide. Full powers are given as to opening, closing, or fencing public streets, and for supervising the formation and repair of private streets and lanes. Councils are further authorised to execute works for, or to contract for the lighting, sewerage, and drainage of municipalities; to take all measures requisite for the public health; to establish public baths, fountains, and parks; to grant licenses for slaughter-houses, hide and skin markets, for the depasturing of cattle, and for the removal of sand and gravel; to control the erection or pulling down and the maintenance of buildings and hoardings; to organise fire brigades, and to order the removal of inflammable buildings. Under the Health Act 1898, every district and municipal council is constituted the Local Board of Health for its particular district, and is charged with the execution of the provisions of that Act for securing the proper hygienic and sanitary conditions in such district.

(iii.) *Assessments and Rates.* Owners and occupiers of ratable property in municipalities are assessed each year on the same basis as stated above in respect to ratable property within districts under the government of district councils. In addition to the rate authorised by the Public Health Act *a general rate*, not exceeding one shilling in the pound, may be declared; rates for lighting and for the improvement of parks and reserves may also be levied, the former being limited to fourpence and the latter to threepence in the pound. The council may also declare a rate for defraying the expense of watering streets, to be apportioned among the persons liable for the rates in respect of properties fronting such streets. *Special and separate rates* may also be levied in the same manner as by district councils, but, in the case of municipalities, the general and special rates together must not exceed two shillings in the pound.

(iv.) *Borrowing powers* of municipal corporations are substantially the same as those of district councils, and similar additional powers were given to municipalities as to districts by the Municipal Corporations Amendment Act 1903.

(v.) *Revenue, Expenditure, and Miscellaneous.* Other provisions as to the revenue and expenditure of municipalities, and their powers as regards permanent works, are the same as those in force under the Districts Councils Acts, referred to above, while very wide powers are given to municipal councils in respect of a variety of matters and things to provide by means of by-laws for the general good government of the municipalities.

4. **Finances of District Councils and Corporations, 1901 to 1909.**—The subjoined tables shew the amounts of assessments and the revenue and expenditure of district councils and of corporations for each financial year from 1901 to 1909 inclusive; the figures given are exclusive of the Main Roads Funds, particulars as to which may be found in the section of this book on "Roads and Bridges." (See page 693 *ante*).

SOUTH AUSTRALIA.—ASSESSMENT, REVENUE, AND EXPENDITURE OF LOCAL AUTHORITIES, 1901 to 1909 (EXCLUSIVE OF MAIN ROADS FUNDS).

Year.*	Amount of Assessment (Annual Value).	Revenue.				Expenditure.	
		From Rates.	From Subsidies.	Other Sources.	Total.	On Public Works.	Total.
				DISTRICT COUNCILS.			
	£	£	£	£	£	£	£
1901	1,412,507	63,321	15,225	51,919	130,465	65,406	128,499
1902	1,433,036	63,193	15,735	38,198	117,126	66,355	121,210
1903	1,452,413	64,207	15,358	40,713	120,278	64,642	122,936
1904	1,488,716	70,975	14,252	39,766	124,993	70,201	123,778
1905	1,503,230	71,603	15,490	46,603	133,696	69,769	131,028
1906	1,604,979	75,253	16,845	39,987	132,085	72,067	128,605
1907	1,647,895	81,295	18,296	28,395	127,986	81,208	121,030
1908	1,801,370	84,036	23,054	27,079	134,169	89,665	128,072
1909	1,849,286	89,051	20,718	30,783	140,552	104,834	146,468
				CORPORATIONS.			
1901	1,177,850	87,289	9,733	49,342	146,364	55,533	146,091
1902	1,195,991	87,961	9,113	60,531	157,605	58,651	157,523
1903	1,208,825	85,702	10,470	57,509	153,681	55,544	152,475
1904†	1,222,522	96,545	14,766	45,534	156,845	61,004	156,722
1905	1,236,578	98,632	15,127	47,267	161,026	60,720	159,863
1906	1,253,566	99,160	14,713	52,225	166,098	63,422	162,078
1907	1,254,956	100,863	14,276	39,779	154,918	88,525	161,754
1908	1,286,696	103,109	15,479	50,470	169,058	86,889	167,797
1909	1,340,755	108,480	15,828	57,837	182,145	97,118	177,897

* Up to and including the year 1903, the financial year for Corporations ended on the 31st December, but after that date ends on the 30th November. The financial year for district councils ends on the 30th June. † For eleven months ended the 30th November, 1904.

5. **Adelaide Water Supply System.**—The water supply system of Adelaide is under the control of the Public Works Department. The supply is obtained partly from the catchment areas of the rivers Onkaparinga, Torrens, and Sixth Creek, and partly from springs and pumping stations. There are three storage reservoirs, situated at Happy Valley, Hope Valley, and Thorndon Park, having an aggregate capacity of 3,895,000,000 gallons, while the tanks used in connection with the springs and pumping stations have a further capacity of 4,824,000 gallons. The total capital cost up to the 30th June, 1910, was £1,802,703, the total revenue being £2,422,978 and the area served approximately 80,000 acres.

The following table gives various particulars relating to the water supply of Adelaide for the years 1904 to 1910 inclusive:—

ADELAIDE WATER SUPPLY.—LENGTH OF MAINS, REVENUE, EXPENDITURE, AND CONSUMPTION OF WATER, 1904 to 1910.

Year Ended 30th June.	Length of Mains.	Gross Revenue.	Working Expenses.	Net Revenue.	Percentage of Net Revenue on Capital Cost.	Total Consumption of Water.[1]
	Miles.	£	£	£	%	Million of Gals
1904 ...	640	70,333	19,257	51,076	3.09	3,550
1905 ...	647	72,471	20,002	52,469	3.16	3,650
1906 ...	656½	72,976	22,298	50,678	3.02	3,550
1907 ...	667½	74,727	19,703	55,024	3.24	3,350
1908 ...	673	76,707	21,233	55,474	3.26	4,000
1909 ...	684	81,412	20,762	60,650	3.53	4,000
1910 ...	704	82,290	22,709	59,581	3.31	4,000

1. In the Adelaide Water District there are no governing meters. The quantities shewn above are as recorded by gaugings taken at the reservoirs, and include evaporation and absorption.

6. **Adelaide Sewerage System.**—In connection with the sewerage system of Adelaide, which is also under the control of the Public Works Department, about 288 miles of sewers had been laid in the city and suburbs up to the 30th June, 1910. The sewage is disposed of on a farm and filter-beds, the latter being used only during the winter months.

The following table gives particulars relating to the Adelaide sewerage system for the years 1904 to 1910 inclusive:—

ADELAIDE SEWERAGE SYSTEM.—REVENUE AND EXPENDITURE, 1904 to 1910.

Year Ended the 30th June.	Revenue.			Expenditure.			Net Revenue.	
	Rates and Interest.	Sewage Farm. Sales of Produce, etc.	Total.	Maintenance.	Sewage Farm Working Expenses.	Total.	Total.	Percentage on Capital Cost.
	£	£	£	£	£	£	£	%
1904 ...	30,923	6,594	37,517	5,466	5,962	11,428	26,089	4.12
1905 ...	31,682	6,817	38,499	5,679	5,393	11,072	27,427	4.41
1906 ...	32,530	7,006	39,536	5,921	5,901	11,822	27,714	4.45
1907 ...	32,380	6,390	38,770	6,284	5,460	11,744	27,026	4.00
1908 ...	32,678	7,436	40,114	6,294	5,081	11,375	28,739	4.49
1909 ...	34,701	8,284	42,985	7,161	5,917	13,078	29,907	4.56
1910 ...	36,322	7,213	43,535	7,184	6,088	13,272	30,263	4.41

7. **Water Supply in Country Towns.**—In South Australia there is a number of country waterworks under the control of the Public Works Department. These works are partly used for irrigation purposes, and the most important of them have already been referred to in the section of this book dealing with the subject of "Irrigation." (See p. 602 *ante*.) In addition to the works mentioned in the section referred to, there are other country districts served by reticulations extending over 311 square miles. Detailed particulars of the various works are not available. The total extent of country for which reservoir water is available is about 4250 square miles, the reservoirs holding, in the aggregate, 7,370,000,000 gallons, and the main pipe-lines reaching 2278 miles. The capital cost of the works under the waterworks branch, as distinct from the water conservation branch, which deals with isolated and remote districts, is approximately £4,095,000.

8. **Metropolitan Fire Brigade.**—The Metropolitan Fire Brigade is managed by a Board consisting of six members, two being nominated by the Government, one by the Adelaide city council, one by the other metropolitan municipalities, and the other two by the contributing insurance companies. The revenue of the Board is derived by contributions of three-ninths by the Government, four-ninths by the insurance companies, and two-ninths by the city of Adelaide and the other municipalities subject to the Act. During the year 1910 the number of calls received was 257, including 33 malicious false alarms.

§ 6. Western Australia.

1. **Types of Local Authorities.**—In this State there are three forms of local authorities, namely:—(i.) Municipalities, (ii.) Road Districts, and (iii.) Local Boards of Health. The first Municipalities Act was passed in 1871, but only a few districts were incorporated under it. In 1895 a more comprehensive measure, the Municipal Institutions Act, was passed, and after being amended from time to time was consolidated by the Municipal Institutions Acts 1902 and 1904. In 1906 the most recent enactment, the Municipal Corporations Act, was passed, repealing and consolidating previous enactments. The whole area of the State outside incorporated municipalities is divided into road districts, which are administered under the Roads Act 1902 and 1904. In municipalities the councils act as Health Boards for the purpose of administering the Public Health Act,

while outside municipalities local Boards of Health may be formed. In 1904 another local government measure, the Water Boards Act, was passed, under which Boards may be appointed for the control of waterworks, and rates may be levied for the purpose, the maximum being fixed at two shillings in the pound of ratable value.

2. **Municipalities** are now regulated by the Municipal Corporations Act, which came into force on the 1st January, 1907. Provision is made for the continuation of existing municipalities, and the Governor is authorised to constitute new municipalities on petition signed by at least fifty property-holders of the district proposed to be incorporated; to unite adjoining municipalities on petition under their common seals; to sever any portion from a municipality on petition signed by a majority of the ratepayers, and to annex such portion to a contiguous municipality or road district.

(i.) *Municipal Councils* consist of a mayor and councillors, the number of which depends upon the population of the municipality; if the population is less than 1000 there are six councillors, if from 1000 to 5000 there are nine councillors, and if the population is over 5000 there are twelve councillors, or three for each ward. Any male ratepayer of the age of twenty-one years, if a natural born or naturalised subject, is eligible for election as mayor or councillor, except ministers of religion, uncertificated bankrupts, prisoners, and certain other persons who may be disqualified on the ground of interest.

(ii.) *Qualification of Voters.* Every ratepayer, of twenty-one years of age or over, is entitled to vote at the municipal elections. In the case of joint owners or occupiers, each owner or occupier, if not exceeding two in number, is deemed to be the owner or occupier of half the property; if more than two in number the owners or occupiers may appoint two of their number to be registered in respect of the property. Corporations and companies may also nominate two persons to be registered as voters.

(iii.) *Powers and Duties of Councils.* The councils have power to make by-laws with respect to the usual matters pertaining to municipalities, and are also invested with the control and management of all public places, streets, roads, bridges, sewers, and drains within the municipality. They may contract for the lighting of any part of the municipality for a period not exceeding three years, and may levy a lighting rate; they may construct dams or reservoirs for water supply, may establish fire brigades and baths, and may provide places of recreation, pounds, abattoirs, markets, and weighbridges.

(iv.) *Valuation of Ratable Property.* All land is ratable property except the following:—Property of the Crown used for public purposes or unoccupied; property used for religious or charitable purposes; public libraries, museums, etc.; cemeteries; any land declared by the Governor to be exempt from municipal rates. Generally the annual value of improved or occupied land is the average rent obtainable, less 20 per cent., but in no case may the annual value be less than 4 per cent. of the fee-simple value. The annual value of unimproved or unoccupied land is taken to be not less than 7½ per cent. on the capital value. No allotment of ratable land may be valued at an annual value of less than £2 10s.

(v.) *Rates.* General rates are levied annually, but may not exceed one shilling and sixpence in the pound on the annual value. Lighting rates and special rates for the repayment of debentures and interest may also be struck, but may not exceed the maximum rate allowed in the case of general rates.

(vi.) *Borrowing Powers.* The council of a municipality may borrow money on the credit of the municipality for permanent works, or for the purpose of liquidating the principal moneys owing on account of any previous loan. Permanent works may be the construction or alteration of any street, footway, road, bridge, culvert, wharf, or jetty; the construction of sewers and drains, and works connected with sewerage and drainage; the construction or purchase of waterworks, tramways, municipal offices, pounds,

abattoirs, markets, and baths; the improvement of endowment lands; providing places of public recreation; the construction of a general warehouse, or a theatre, or of refuse destructors; and the purchase of quarries or land. The amount borrowed at any time may not exceed ten times the average ordinary income of the municipality for the two years last preceding, and the amount borrowed to liquidate any loan must not exceed the balance of principal owing. A municipality may also overdraw on the amount of its current account, but the overdraft must not at any time exceed one-third of the ordinary revenue for the preceding year.

(vii.) *Government Subsidies.* Grants are made annually to municipalities by way of subsidies on the amounts of rates collected. To entitle any council to participate in the allocation of the annual Parliamentary vote the council must have levied a minimum general rate of one shilling in the pound, and must have collected not less than £300 from such rate. Newly-constituted municipalities are, during the first year of existence, dealt with apart from the provisions of the general scheme, and are allowed a subsidy of £2 for every £1 of general rate collected; in subsequent years they participate according to the general provisions. The following table shews the basis on which the municipalities are classified:—

WESTERN AUSTRALIA.—CLASSIFICATION OF MUNICIPALITIES.

Income from General Rates.	From £20,000 to £30,000.	From £10,000 to £20,000.	From £5000 to £10,000.	From £500 to £5000.	Under £500.
Class	1st	2nd	3rd	4th	5th

No subsidy is paid on income from general rates exceeding £3000.

3. **Area, Population, etc., of Municipalities.**—Returns regarding the area, population, and valuation of municipalities are defective. They are shewn in the table hereunder:—

WESTERN AUSTRALIA.—NUMBER, AREA, POPULATION, NUMBER OF DWELLINGS, AND VALUATION OF MUNICIPALITIES, 1901 to 1909.

Year ended the 31st October.	Number of Municipalities.	Area	Population.	Dwellings.			Amount Payable in respect of Rates.
				Occupied.	Unoccupied.	Total.	
	No.	Acres.	No.	No.	No.	No.	£
1901	42	71,721	*96,807†	†20,989	†967	†21,956	‖
1902	44	68,867	*96,807†	†20,989	†967	†21,956	‖
1903	44	73,338	‡115,350	†20,989	†967	†21,956	‖
1904	43	77,331	†115,182	20,961	960	21,921	‖
1905	43	75,415	†115,182	20,961	960	21,921	132,453
1906	45	81,519	¶125,474	20,961	960	21,921	142,229
1907	47	89,748	136,845	§26,756	§2,050	§28,806	142,770
1908	47	90,078	135,525	29,208	2,112	31,320	144,344
1909	46	88,833	141,543	30,535	1,263	31,798	138,869

* Census figures 1901. † Returns for thirty-nine municipalities only. ‡ Rough census figures, 1903. § Exclusive of one municipality. ‖ Not available. ¶ Returns for forty-four municipalities.

Complete particulars of improved or unimproved capital values are not available. In the year 1909 the capital value of ratable property in municipalities was £17,544,977, exclusive of three municipalities, of which the unimproved value was £1,120,691.

4. **Revenue and Expenditure of Municipalities, 1901 to 1909.**—The following table gives particulars as to the revenue and expenditure of municipalities during each year from 1901 to 1909 inclusive:—

WESTERN AUSTRALIA.—REVENUE AND EXPENDITURE OF MUNICIPALITIES, 1901 to 1909.

Year ended the 31st October	Revenue.				Expenditure.			
	From Rates.	From Govt. Grants.	From other Sources.	Total.	Works and Improvements.	Disbursements in respect of Loans.	Other Expenses.	Total.
	£	£	£	£	£	£	£	£
1901 *	78,021	66,860	82,228	227,109	111,241	23,809	79,365	214,415
1902 ...	94,894	81,436	113,591	289,921	125,721	33,936	123,615	283,272
1903 ...	104,760	80,938	116,653	302,351	142,347	33,294	137,228	312,869
1904 ...	119,110	90,868	213,785	423,763	187,747	38,227	168,524	394,498
1905 ...	130,575	85,798	167,793	384,166	183,226	53,746	174,716	411,688
1906 ...	146,206	95,997	210,226	452,429	165,421	50,739	200,844	417,004
1907 ...	136,868	85,473	151,865	374,206	132,103	57,804	228,475	418,382
1908 ...	139,228	67,315	176,040	382,583	103,943	59,649	239,270	402,862
1909 ...	138,445	37,301	207,982	383,728	83,283	62,749	224,033	370,065

* Incomplete.

5. **Assets and Liabilities of Municipalities, 1901 to 1909.**—The following table gives particulars respecting the assets and liabilities of municipalities at the end of each financial year from 1901 to 1909 inclusive :—

WESTERN AUSTRALIA.—ASSETS AND LIABILITIES OF MUNICIPALITIES, 1901 to 1909.

Year ended the 31st October	Assets.					Liabilities.		
	Balance in Hand.*	Value of Property owned by Municipalities.	Accrued Sinking Funds for Redemption of Loans.	Other Assets.	Total.	Outstanding Debts and Bonds.	Other Liabilities.	Total.
	£	£	£	£	£	£	£	£
1901† ...	37,259	214,984	42,311	13,432	307,986	321,000	19,762	340,762
1902‡ ...	49,557	294,800	62,239	20,420	427,016	413,050	29,700	442,750
1903 ...	41,375	332,492	64,936	34,140	472,943	437,300	41,200	478,500
1904 ...	72,894	354,798	81,514	36,718	545,924	589,800	32,304	622,104
1905 ...	43,209	473,320	94,892	36,086	647,507	623,414	28,031	651,445
1906 ...	78,579	537,407	110,165	46,495	772,646	713,350	45,597	758,947
1907 ...	39,414	553,873	125,742	55,430	774,459	730,994	47,131	778,125
1908 ...	27,291	605,165	143,434	58,988	834,878	757,494	42,321	799,815
1909 ...	41,216	628,205	152,416	56,705	878,542	795,108	36,352	831,460

* Including bank balance, cash in hand, and fixed deposit. † Incomplete.
‡ Exclusive of the municipality of Mount Morgans.

6. **Road Districts.**—The whole area of the State, outside incorporated municipalities, is divided into districts, the executive powers being vested in elective boards. These districts were originally formed solely for the purpose of controlling roads and bridges, but their powers and duties have been extended, so that at the present time they correspond closely to the shires of the other States of the Commonwealth. The enactments at present governing the administration of the Road Boards are the Roads Acts 1902 and 1904, the Parks and Reserves Act, the Cattle Trespassing Act, the Width of Tyres Act, the Cart and Carriage Licenses Act, and the Dog Act. The general powers and duties of the Boards as regards roads and bridges are described in the chapter of this book entitled "Roads and Bridges." (See page 693 *ante*.) In addition to these powers and duties the Boards have power to do everything necessary for the proper management of the property under their control, and may also construct and maintain tanks, wells, and

dams, and bore for water for the purpose of supplying water along any road in the district. Subject to the provisions of the Roads Acts, the Board has also the control and management of any such public reserves, parks, commons, wells, dams, reservoirs, buildings, machines, etc., as the Governor may direct. The Board has also extensive powers for making, altering, and repealing by-laws.

7. **Boards of Health** may be established under the Public Health Act 1886, either within or outside of municipal boundaries. In the former case the Act is administered by the municipal councils, while in the latter case special Boards are elected by the ratepayers. The revenue of these Boards consists chiefly of moneys received from health rates and sanitary fees, and the largest item of expenditure is directly connected with the sanitary service. The following table shews particulars of the receipts and expenditure of the various Boards—both municipal and extra-municipal—during each year from 1901 to 1909 inclusive:—

WESTERN AUSTALIA.—RECEIPTS AND EXPENDITURE OF LOCAL HEALTH BOARDS, 1901 to 1909.

Year ended the 31st October.	Revenue.			Expenditure.		
	From Public Health Rate.	From other Sources.	Total.	On Sanitary Services.	Other Expenses.	Total.
	£	£	£	£	£	£
1901	15,230	17,477	32,707	18,787	12,992	31,779
1902	17,616	22,569	40,185	19,248	20,114	39,362
1903	21,884	22,610	44,494	22,872	21,184	44,056
1904	25,777	25,904	51,681	28,299	23,321	51,620
1905	26,003	30,864	56,867	30,724	28,061	58,785
1906	*28,242	40,943	69,185	40,518	28,038	68,556
1907‡	†33,289	35,285	68,574	39,419	31,697	71,116
1908	‖36,304	41,674	77,978	§43,830	§34,981	§78,811
1909	¶39,447	50,688	90,135	§49,502	§38,465	§87,967

* Including sanitary rates, £11,745. † Including sanitary rates, £16,564. ‡ Exclusive of particulars of twenty-one boards which did not furnish returns, and of five boards which were not active during the year, all outside municipalities. Particulars for previous years are also incomplete. § Exclusive of expenditure of one extra-municipal board. ‖ Including sanitary rates, £17,707. ¶ Including sanitary rates, £16,804.

On the 31st October, 1909, there were forty-six Local Boards of Health within municipalities and sixty-nine extra-municipal Boards; fifteen of the latter were inactive during the year.

8. **The Perth Metropolitan Water Supply, Sewerage, and Drainage.**—The Perth Metropolitan Water Supply Works were first opened by a private company in October, 1890. Under the provisions of the Metropolitan Waterworks Act 1896, however, the works were purchased by the Government at a cost of £220,000, and were placed under the control of a Board, the functions of which have been exercised since the year 1904 by the Minister for Works. By the Metropolitan Water Supply, Sewerage, and Drainage Act 1909, all water and sewerage works formerly vested in the Metropolitan Board were transferred to a Minister of Water Supply, Sewerage, and Drainage. This Act also provides for the administration of the transferred properties, for the constitution of water reserves, for the construction and maintenance of works, for the prevention of waste, for rates and sale of water, and for other matters.

(i.) *Water Supply.* The supply of water is derived from three sources—(i.) the Victoria reservoir, (ii.) the Mundaring reservoir, and (iii.) from six artesian bores.

(*a*) *The Victoria Reservoir.* This is the main source of supply. The reservoir has a capacity of 220,000,000 gallons, and has a catchment area of 10,000 acres on the Darling Ranges. The water gravitates from the Victoria reservoir to Perth through two

mains which are respectively 21 inches and 12 inches in diameter, and 15½ and 17 miles in length. There are two service reservoirs—one of 2,413,000 gallons, and the other of 600,000 gallons capacity. The quantity of water drawn from this reservoir during the year ended the 30th June, 1910, was 392.7 million gallons.

(*b*) *The Mundaring Reservoir.* This reservoir is used as an emergency supply. It has a capacity of 4,650,000,000 gallons, but is only connected by one eight-inch main. During the financial year 1909-10, 18,891,000 gallons were drawn. This reservoir has a catchment area of 569 square miles, and was constructed in connection with the goldfields water supply.

(*c*) *Artesian Bores.* There are in all six artesian bores, the flow from which augments the main supply from the Victoria reservoir. The total flow is about 360,000,000 gallons during the season, which lasts approximately for six months.

(*d*) *Financial Operations of Board, 1901 to 1910.* The following table gives particulars of the financial operations of the Metropolitan Waterworks Board for each year ending the 30th June from 1901 to 1910 inclusive:—

PERTH METROPOLITAN WATERWORKS BOARD.—PARTICULARS OF FINANCIAL OPERATIONS, 1901 to 1910.

Year ended the 30th June.	Capital Cost of Works.	Depreciation.	Net Capital Cost.	Gross Revenue.	Cost of Maintenance and Management.	Interest Earned by Net Revenue on Net Capital Cost.	Percentage of Expenses on Gross Revenue.
	£	£	£	£	£	Per cent.	Per cent.
1901 ...	386,414	...	386,414	27,249	8,021	4.9	29.4
1902 ...	395,764	...	395,764	32,676	13,059	5.2	36.9
1903 ...	408,681	...	408,681	34,164	18,536	3.8	54.2
1904 ...	413,764	...	413,764	36,517	14,674	5.3	40.2
1905 ...	418,479	...	418,479	42,177	14,561	6.6	35.0
1906 ...	440,125	6,165	433,960	43,571	12,989	7.0	29.8
1907 ...	486,857	15,915	470,942	45,848	14,923	6.6	32.5
1908 ...	503,581	25,463	478,118	46,300	12,685	7.0	27.4
1909 ...	524,022	34,468	489,554	45,711	14,162	6.4	31.0
1910* ...	628,757	44,415	584,342	60,249	20,862	6.74	34.62

* Perth, Fremantle, and Claremont combined.

(*e*) *Consumption of Water, 1901 to 1910.* The following table shews the total annual supply, the average daily supply, and the average daily supply per house and per head of population during each financial year from 1901 to 1910 inclusive:—

PERTH METROPOLITAN WATERWORKS BOARD.—CONSUMPTION OF WATER, 1901 TO 1910.

Year ended the 30th June.	Total Annual Supply.*			Average Daily Supply.*	Number of Houses Supplied.	Estimated Population Supplied.	Average Daily Supply.	
	From Reservoir.	From Bores.	Total.				Per House.	Per Head of Population.
	000 Gals.	000 Gals.	000 Gals.	000 Gals.	No.	No.	Gals.	Gals.
1901 ...	380,003	161,589	541,592	1,484	6,182	32,000	240	45.2
1902 ...	334,752	168,439	503,191	1,378	7,043	35,000	195	39.3
1903 ...	203,517	366,504	570,021	1,561	8,108	38,350	192	40.7
1904 ...	436,657	264,566	701,223	1,921	9,104	41,000	211	46.8
1905 ...	481,528	274,327	755,855	2,071	10,105	45,000	204	46.1
1906 ...	552,373	288,812	841,185	2,305	10,882	48,000	212	48.0
1907 ...	506,751	359,797	866,548	2,375	12,164	52,000	195	45.6
1908 ...	562,316	219,718	782,034	2,137	13,156	52,000	162	41.9
1909 ...	349,467	281,585	631,052	1,732	14,012	54,000	123	32.0
1910 ...	392,715	281,104	673,819	1,846	14,512	56,000	127	33.0

* In thousands of gallons.

(ii.) *Sewerage and Drainage.* In Perth systems for the disposal of sewage and storm water have been carried out by the Public Works Department. The construction of septic tanks and filter beds was commenced in April, 1906, and has now been completed. In January, 1910, the construction of the main sewers and drains was nearing completion, while considerable progress had been made with the reticulation in certain districts. By the Metropolitan Water Supply Sewerage and Drainage Act 1909, the construction, maintenance, and control of these works were placed in the hands of the Minister of Works.

9. **Fremantle Harbour Trust.**—Under the provisions of an Act passed in 1902 a Harbour Trust was constituted for the general administration of Fremantle harbour, and since January, 1903, the Trust has had full control of all the affairs of the harbour. The works, which were commenced in 1892, were designed with the object of forming a safe and commodious harbour within the mouth of the Swan River, so as to admit vessels at all states of the tide, and thus enable cargo to be loaded and discharged at the quays and goods-sheds on the river banks. Two ocean moles have been thrown out from the north and south heads, the former being 3450 feet and the latter 2040 feet long. A channel, 450 feet wide and 30 feet deep at low water, has been blasted and dredged through the rock which formerly crossed the estuary to the river, and wharves and goods-sheds have been constructed along the reclaimed foreshore on the south side of the harbour. At the present time all the European mail boats, which make Fremantle the first and last port of call in Australia, are able to enter and leave the harbour in all weather and at all tides. For the year ended the 30th June, 1910, the total revenue of the Trust was £125,189, and the expenditure £44,246, shewing a gross profit of £80,943. The gross amount paid to the Treasury for the year was £75,253, being interest £50,505, sinking fund £14,430, and surplus revenue account £10,318.

10. **Fire Brigades Boards.**—Under the Fire Brigades Act 1898, fire brigades were established in a number of the more important centres of population in the State. These brigades were under the control of local boards, and were in some cases municipal and in others volunteer. On the 30th June, 1910, there were forty-five such Boards in existence. The figures given below shew particulars of forty-two of these Boards for the year 1909-10, three Boards having remained inactive during the year:—

WESTERN AUSTRALIA.—FIRE BRIGADES BOARDS, 1909-10.

Number of firemen	784	Value of land, buildings, & plant	£38,449
Receipts	£15,682	Expenditure...	£15,458

An Act to make further provision for the protection of life and property from fire was passed in 1909 and came into operation on the 1st January, 1910. It is called the District Fire Brigades Act, and divides Western Australia into two fire districts under the West Australia Fire Brigades Board. The Act does not apply to the municipal district of Perth or to any other municipal district to which the provisions of the 1898 Act apply, but those bodies are at liberty to petition to be brought within the operation of the new Act.

§ 7. Tasmania.

1. **Development of Local Areas.**—In this State the city of Hobart was incorporated by special Act in the year 1852, but it was not until 1858, when the Rural Municipalities Act was passed, that a general scheme for the establishment of municipalities was extended throughout the State. This Act was amended from time to time without, however, altering its chief characteristics. In 1869 a Roads Act was passed, and after being amended at various times was consolidated in 1884. Under the provisions of these Acts parts of the State were placed under the control of Town Boards and Road Trusts.

The general rate under the Municipalities Act was limited to one shilling and sixpence in the pound of annual value, while special rates could be levied in rural districts, provided that the general and special rates together did not exceed one shilling and sixpence in the pound.

2. **Acts now in Force.**—In 1906 the whole of the Acts dealing with local authorities were amended and consolidated by the Local Government Act of that year. The whole State, with the exception of the urban municipalities of Hobart and Launceston, is divided into municipal districts, and every Rural Municipality, Town Board, Main Road District, Road District, Local Health District, Fruit District, Rabbit District, School District, and Public Recreation Ground District included in any municipality established by the Act is abolished. Each district is incorporated and is under the control of a warden and councillors, who, in addition to the specific duties and powers imposed and conferred by the Act of 1906, are vested with powers and authorities under the following Acts:—The Codlin Moth Act 1888, the Rabbits Destruction Act 1889, the Public Health Act 1903, the Education Act 1885, the Roads Act 1884, the Rural Municipalities Act 1865, the Police Act 1905, the Town Boards Act 1896, the Public Recreation Grounds Act 1888, the Cemeteries Act 1865, and the Californian Thistle Act 1883. The Governor is authorised to unite, subdivide, or abolish municipalities or wards on petition, and may do so without petition if in any municipality there is at any time no council or an insufficient number of councillors to form a quorum. The Act of 1906 was amended in 1908, and it is proposed to still further amend the Act in the 1911 session of Parliament.

(i.) *Formation of Councils.* In the case of municipalities not divided into wards the council is to consist of the number of members, being a multiple of three, assigned to it by the Governor, while the councils of municipalities which are subdivided consist of three councillors for each ward. Any resident elector is eligible to act as a councillor unless he is disqualified as being an interested person, a bankrupt or convict, or as undergoing a sentence of imprisonment, or as insane. The warden is elected by the councillors from their own body.

(ii.) *Qualification of Electors.* Both owners and occupiers of property within a municipality are allowed plurality of votes according to the following scale :—

Annual Value of Property	Under £30.	£30 to £80.	£80 to £160.	£160 to £240.	£240 to £360.	£360 and upwards.
Number of Votes	1	2	3	4	5	6

In the case of joint owners or occupiers the number of votes according to the above scale is equally divided as far as possible, and the vote or votes which cannot be so divided may be given by such one of the joint owners or occupiers as may be appointed by the others. The provisions of the Acts relating to voting by post at parliamentary elections may be made applicable to any municipal election on the petition of the council to the Governor.

(iii.) *Local Districts and Committees.* Any municipal council may by special resolution define a local district to be assigned to a local committee, and any district proclaimed under the Public Recreation Grounds Act 1888 may also be defined as a local district. A local committee may exercise any of the powers and functions conferred upon councils as may be declared to be within its province by special resolution.

(iv.) *Revenue and Rates.* The ordinary revenue of a council, which consists principally of (*a*) rates (other than special rates), tolls, ferry dues, market dues, fees, and other charges authorised by the Act, and (*b*) grants from the central Government, is carried to a general account called the municipal fund. Rates are of two kinds, namely, (*a*) general, and (*b*) special. (*a*) *General Road Rates*, of not less than sixpence in the pound of the annual value of the whole of the ratable property in a municipality, must be levied at least once a year, but the total amount of all such rates levied in any one year must

not exceed one shilling and threepence in the £. The proceeds of general road rates are carried to a separate account and are to be applied for the purposes of constructing and maintaining roads, streets, bridges, jetties, wharves, and tramways; at least three-fifths of all sums received in respect of property situate in a particular ward from the making of such a rate must be expended within such ward for the purposes mentioned. *General Health Rates* may be levied either prospectively or retrospectively in order to defray the expenses incurred in the execution of the Public Health Act 1903. (*b*) *Special Rates* may be made for the purpose of defraying the cost of constructing and maintaining works for sewerage or drainage, for the manufacture of gas, electricity, hydraulic or other power; watering or lighting roads; maintaining public recreation grounds; the destruction of rabbits; any of the purposes of the Public Health Acts; and of constructing and maintaining slaughter houses, abattoirs, or other works. A *Codlin Moth Tax* may be levied as prescribed by the Codlin Moth Act 1888, and when a council undertakes the removal of house refuse from premises the expense of such work is to be paid for by a *Special Cleansing Rate*. For defraying the expenses incurred in the execution of any work for the special benefit of a particular part of a municipality, the council may also levy a special rate called a *Separate Local Rate* upon all ratable property within such part, but the question as to whether any work is or is not for the special benefit of any particular part of the municipality must be referred to the Minister, who may direct, when such rate would exceed sixpence in the pound, that the question of levying the same be left to the decision of the electors of the defined part; whenever the expense to be incurred involves more than one yearly rate, the question must be referred to the electors.

(v.) *Ratable Property.* The council is not empowered to levy any rate or charge (except for water, prevention of fire, cleansing, drainage, or sewerage, or for light or power actually supplied, or for any service actually rendered) upon—Crown property; any property used solely for religious purposes; any portion of any premises used exclusively as a public library, museum, school of arts or mines, literary or scientific institution, or any cemetery; benevolent asylums or charitable institutions; or upon any building or place vested in trustees for an agricultural or pastoral society for the purposes of a show ground. The Crown has in any such case the right to commute its liability by payment of a sum agreed upon between the council and the Treasurer.

(vi.) *Borrowing Powers.* Power is given to the council to borrow money either—

(*a*) By the sale of debentures under provisions of the Local Bodies Loan Act for the purpose of permanent works and undertakings, or for the purpose of liquidating the principal sum owing on account of a previous loan; or

(*b*) By way of temporary advances against rates to an amount not exceeding one-half the expected total proceeds of such rate. Temporary advances must be paid within twelve months of the date of borrowing.

(*c*) Under the amending Act of 1908, councils may raise temporary loans by way of bank overdraft on the credit of the municipality to an amount not exceeding one-half of the prior year's revenue, and in addition may overdraw to the extent of deposit receipts for money due by the bank.

(vii.) *General By-laws.* The councils have wide powers to make by-laws for the general purposes of the Act, and particularly in connection with the following matters:—The trespass and agistment of animals; the erection or demolition of buildings, awnings, and temporary structures; the prevention and extinction of fires; the granting of licenses; the regulation of markets and weighbridges and the establishment of rents and fees for the use thereof; the regulation or the prohibition of the introduction of any pest or anything affected by a pest; the control of public safety and the preservation of public decency; the control and management of roads and footways; the imposition

and collection of tolls upon roads and bridges, and of rates and dues upon ferries, wharves, tramways, jetties, piers, and markets under the control of the council; the regulation of various trades and callings; the control of the general traffic in public places, boats and boatmen, vehicles, steam rollers, and bicycles.

The councils are also vested with all powers which were conferred upon any of the local bodies mentioned above (see page 1039 *ante*, par. 2), and which were abolished by the Local Government Act 1906.

(viii.) *Water Districts.* Any number of municipalities, situated so as to be capable of taking advantage collectively of some common water system or catchment area, may by petition to the Governor be constituted a water district under the Act. In every case where a water district is proclaimed upon the joint petition of two or more municipal councils the management of such district is in the hands of a joint council consisting of such a number of members of each of the councils as the Governor may determine. This council is invested with borrowing and rating powers and may supply water within the district on such terms as it may fix, provided that no water may be supplied for irrigation until domestic and stock supply purposes have first been satisfied. Provision is also made in the Act for uniting municipalities for the purpose of carrying out sewerage, irrigation, or water conservation schemes for the common benefit of the municipalities, or for any other purpose authorised by the Act, such as, in the opinion of the Governor, is likely to be of permanent utility, and is best capable of being carried out by concerted action.

3. **Value, Revenue, and Expenditure of Municipalities.**—The following table shews the annual value, total receipts, and expenditure of municipalities for the years 1908 and 1909 :—

TASMANIA.—ANNUAL VALUE, REVENUE, AND EXPENDITURE OF MUNICIPALITIES, 1908 and 1909.

Year.	Number of Municipalities.	Annual Value of Ratable Property	Revenue.				Expenditure.[2]
			From Rates.	From Govt.	From other Sources.[1]	Total.	
		£	£	£	£	£	£
1908 ...	51	1,340,243	142,466	40,254	186,466	369,186	353,699
1909 ...	51	1,404,328	173,453	44,293	92,244	309,990	318,501

1. Including sums derived from loans. 2. Including repayments of loans.

The capital value of ratable property in 1909 was £27,705,040.

4. **Total Revenue and Expenditure of Local Bodies, 1907 to 1910.**—Particulars as to Road Boards and Road Trusts are given in the chapter of this book on "Roads and Bridges." In addition to the local authorities already mentioned, Marine Boards have been established at seven ports in Tasmania for the purposes of constructing and maintaining wharves and jetties and of controlling all matters relating to the shipping in the respective ports. Twenty water trusts and forty cemetery trusts have also been established in connection with municipal bodies. The subjoined statement shews the total revenue and expenditure for all local bodies, exclusive of all amounts contributed by the general Government, during each financial year from 1907 to 1910 inclusive.

TASMANIA.—REVENUE AND EXPENDITURE OF ALL LOCAL BODIES, EXCLUSIVE OF AMOUNTS CONTRIBUTED BY THE GENERAL GOVERNMENT, 1907 to 1910.

Particulars	1906-7.	1907-8.	1908-9.	1909-10.
*REVENUE.				
	£	£	£	£
Marine Boards and Lighthouses	69,143	66,586	72,810	74,723
Municipalities	136,919	170,159	396,186	309,990
Road and Bridge Trusts	30,472	34,612	*a*	*a*
Cemetery Trusts	1,124	1,269	*a*	*a*
Town Boards	29,237	35,506	*a*	*a*
Water Trusts	8,335	18,715	2,281*b*	2,325
Total	275,230	326,847	471,277	387,038
†EXPENDITURE.				
	£	£	£	£
Marine Boards and Lighthouses	60,480	77,601	69,213	82,627
Municipalities	141,550	171,202	353,699	318,501
Road and Bridge Trusts	30,320	34,153	*a*	*a*
Cemetery Trusts	1,210	1,359	*a*	*a*
Town Boards	32,812	35,328	*a*	*a*
Water Trusts	5,300	24,171	2,334*b*	1,923
Total	271,672	343,814	425,246	403,051

* Exclusive of amounts contributed by the general Government. † Exclusive of expenditure from Government contributions. *a* Included in municipalities under the new Local Government Act. *b* Receipts and expenditure of eight water trusts not included in municipalities.

5. **Hobart Water Supply.**—The original water supply of Hobart was obtained from a stream known as the Hobart Rivulet, flowing from Mount Wellington, the works being carried out in 1831 by the Imperial Government. These works consisted of an aqueduct and a line of cast-iron pipes, the water being distributed to several points known as "wells." By an Act of the State Parliament passed in 1860 the works were transferred to the municipality. Under this Act certain additional streams flowing from Mount Wellington were acquired as sources of supply, and a storage reservoir containing 45,000,000 gallons was constructed. The catchment area on Mount Wellington at present comprises an area of 4200 acres, the sources of supply having been extended at various times as far as the North West Bay River, fifteen miles from Hobart.

(i.) *Storage Reservoirs.* There are two storage reservoirs about 2½ miles from the city. One contains 68,000,000 gallons and is 502 feet above sea-level, while the other contains 45,000,000 gallons and is 447 feet above sea-level. The whole of the supply is by gravitation. The water is brought from the various streams by means of stone aqueducts and cast-iron pipes to the reservoirs, and thence by four 10-inch cast-iron mains, of which three lead to the distributing reservoirs and one direct to the shipping and southern portion of the city.

(ii.) *Capital Cost, Tenements Connected, Length of Mains, Revenue and Expenditure, 1910.* The total capital cost to the end of 1910 was £204,879, but a considerable amount of reticulation work has been done out of revenue and not charged to capital account. The outstanding loans at the end of 1910 amounted to £160,175. At the same

date the number of tenements supplied in the city and suburbs was 7655, the population at the end of the year 1909 was 38,916, and the length of reticulation mains at the end of 1910 was 81 miles. The revenue and expenditure for the last six years were as follow:—

HOBART WATERWORKS.—REVENUE AND EXPENDITURE, 1905 to 1910.

Particulars.	1905.	1906.	1907.	1908.	1909.	1910.
	£	£	£	£	£	£
Revenue	20,127	19,125	21,802	19,719	20,091	20,643
Expenditure	16,576	15,817	17,785	22,901	23,729	22,238

(iii.) *Proposed Extensions.* Parliamentary sanction to borrow £63,000 has been obtained for the purpose of improving the water supply of the city and suburbs of Hobart; £56,500 of this amount is to be spent on a new storage reservoir, a contract for the construction of which has recently been let.

6. **Hobart Sewerage System.**—A scheme for the construction of a sewerage system in Hobart was adopted in 1903. The sewage is collected and treated in septic tanks and is then discharged into the estuary of the River Derwent. Up to the end of the year 1909 about 51 miles of sewers (out of a total length of 66 miles) had been laid, and 3948 tenements, sewering a population of 18,000, had been connected at a cost of about £129,503. The revenue for the year was £6215. Extensions are in progress with a view to completing the sewering of over 2000 acres so as to serve an estimated population of about 30,000 people. It is expected that the whole of the tenements will be connected with the sewers by the end of 1911.

§ 8. Local Government Finance.

1. **Introduction.**—In the preceding parts of this section certain particulars have been given regarding local authorities in each individual State. It is proposed to here give in a comparable form for each State particulars regarding the financial operations of local governing bodies. The areas controlled by these bodies are variously known in the several States as cities, towns, boroughs, shires, municipalities, municipal districts, and road districts. The particulars given in the tables in the two next paragraphs relate to financial years ending as follow:—New South Wales: Municipalities, with the exception of the City of Sydney, from 4th February to 31st December. Particulars of the City of Sydney and shires are for the calendar year 1909. Victoria: 30th September, 1909, except Melbourne, 31st December, and Geelong, 31st August, 1909. Queensland: Calendar year, 1909. South Australia.—Corporations, 30th November, and district councils, 30th June, 1909. Western Australia.—31st October, 1909, except road districts, 30th June, 1909. Tasmania.—Calendar year, 1909.

2. **Number, Revenue, Expenditure and Valuation of Local Authorities, 1909.**—The following table gives particulars of the number, revenue, expenditure, and valuation of local authorities in each State and in the Commonwealth during the year 1909. It may be noted that, excepting in Tasmania, the metropolitan water supply systems are not under municipal control; the particulars given of revenue and expenditure for the five States other than Tasmania do not, therefore, include revenue and expenditure on account of these systems.

NUMBER, REVENUE, EXPENDITURE, AND VALUATION OF LOCAL AUTHORITIES IN EACH STATE, 1909.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Cwlth.
No. of local authorities‡ ...	324	206	162	176	150	51	1,069
RECEIPTS.							
Rates—	£	£	£	£	£	£	£
General	1,135,623	916,449	343,567	152,592	143,469	112,778	2,804,478
Other*	80,232	105,080	126,403	44,939	41,010	60,674	458,338
Government grants ...	339,891	175,601	5,274	125,419	89,683	44,293	780,161
Loans† and other sources	664,094	474,686	116,641	91,613	223,617	92,245	1,662,896
Total	2,219,840	1,671,816	591,885	414,563	497,779	309,990	5,705,873
EXPENDITURE.							
Works, services, etc. ...	1,406,073	1,050,416	299,423	294,056	283,765	186,508	3,520,241
Interest on loans and overdrafts	141,271	201,199	17,762	6,163	37,427	35,968	439,790
Redemptions, sinking funds, etc.	††13,235	58,263	30,792	5,596	25,586	25,234	158,706
Administration	276,968	158,436	62,254	37,805	42,300	40,144	617,907
Other	165,373	210,446	175,682	75,355	97,476	30,647	754,979
Total	2,002,920	1,678,760	585,913	418,975	486,554	318,501	5,491,623
VALUATIONS.							
	¶		¶		§ ‡‡		
Capital value of property	146,689,632	252,006,618	47,314,811	63,849,055	17,544,977	27,705,040	‖
Annual value of property	9,260,759	13,564,488	‖	3,190,041	§1,340,496	1,404,328	‖

* Exclusive of rates for water-supply and sewerage in metropolitan and most other principal towns, such rates being collected by special boards or general Government. † Exclusive of loans in connection with extraordinary works of construction. ‖ Not available. § Municipalities only. ¶ Unimproved capital value. ‡ Including particulars for all areas controlled by local governing bodies responsible for the construction and maintenance of roads and streets, such areas being variously known in the several States as cities, towns, boroughs, shires, municipalities, road districts, etc. †† Sydney only: returns for other local authorities not available. ‡‡ Exclusive of three municipalities.

3. **Local Government Loans, 1909.**—The following table gives particulars for each State of loans raised by local authorities during the year 1909, of loans current at the end of that year, of liability on account of interest and sinking fund, and of loans maturing during 1909 :—

PARTICULARS OF LOANS RAISED BY LOCAL AUTHORITIES, 1909.

Particulars.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	C'wealth.
	£	£	£	£	£	£	£
Loans from General Government—							
Raised during year	...	...	18,267	...	5,600	99,762	123,629
Current at end of year ...	...	225,289	365,132	...	62,800	640,343	1,293,564
Loans from other sources—							
Raised during year	717,643	36,653	*	5,000	46,814	33,734	*
Current at end of year ...	4,125,443	4,190,814	*	128,462	733,908	609,563	*
Total—							
Raised during year	717,643	36,653	*	5,000	52,414	133,496	*
Current at end of year ...	4,125,443	4,416,103	869,183	128,462	796,708	1,249,906	11,585,805
Current loans, exclusive of those obtained from General Government, raised within the C'wealth	3,065,796	4,190,814	*	118,562	733,908	...	*
Annual liability on account interest	160,715	191,749	18,814	5,265	37,244	49,996	463,783
Total sinking fund at end of year	256,946	815,747	...	22,342	150,821	115,436	1,361,292
Amount loans maturing during year							
Redeemed	114,054	*	†	2,064	16,500	*	*
Renewed		*	*	4,000	...	*	*

* Not available. † In the case of loans from Government the periodical payments include interest and sinking funds.

SECTION XXVII.

INDUSTRIAL UNIONISM AND INDUSTRIAL LEGISLATION.

§ 1. Development of Trades Unions in Australia.

1. **General.**—In Australia, industrial unionism paved the way for industrial legislation. Conditions of employment were on the whole favourable to the investigation of industrial problems; and experimental legislation was possible because of the simplicity and directness of the aim of those engaged in industrial occupations. Moreover, the non-existence of the complexity of the problems and of the organisation of older countries did not interpose difficulties which might otherwise have operated. Hence rapid changes in laws regulating industry occur and are likely to occur. To a great extent the trades unions were responsible for these laws. They steadily and continuously urged an amelioration of the condition of the working man, and by organisation and discipline they presented a united front to opposing forces, and attained many advantages by a recognition of the principle that unity is strength. Their efforts have resulted in improved conditions, particularly short hours and a healthier mode of life. One great aim of present-day industrial legislation has been said to be, to extend "the reasonable comforts of a civilised community" to those engaged in every branch of industry. Large organisations have been able to attain their ends by force of numbers, and, in the case of the great bulk of the artisan and similar classes, through the solidarity of their unions. The smaller and less perfectly organised industries, unable to maintain an effectual struggle with hope of success, are now receiving, by legislative enactment, the benefits already accrued to the trades unions.

While the demands of the early unionists have almost in their entirety been conceded by the employer, unionism nevertheless continues. Industrial legislation has not yet reached the stage when the conflicts between employer and employees cease, and unions sometimes attain their ends by a strike, or by threatening a strike.

Each State of the Commonwealth has enacted, with more or less elaboration, legislation respecting trade unions and respecting the regulation of the conditions of industrial life, particularly those of factory employment; and has also regulated the hours of business for the great majority of shops. Some of the States have also established machinery for the regulation of wages and other matters connected with employment.

At the present time there is an obvious tendency to adjust such matters throughout Australia on uniform lines. The industrial condition of any State of the Commonwealth

naturally reacts quickly on any other State. This is one of the consequences of a unified tariff, and of the fact that the general economic conditions of any one part of the Commonwealth must necessarily affect very intimately every other part. An expression of the intimacy of these economic and industrial relations of different parts is seen, for example, in the refusal of an Arbitration Court in New South Wales to fix wages in the boot trade in that State at a higher rate than that fixed by the Wages Board in Victoria, because of the additional burden which such a rate would place on local manufacturers.

2. **History of Unionism in Australasia.**—(i.) *Commencement of Unionism: the Eight Hours' System.* The first trade union in Australia was the "Operative Masons' Society," established in Melbourne in 1850. In 1851 a branch of the "English Amalgamated Society of Engineers" was founded in Sydney. For many years the only unions existing were practically those formed by the several branches of the building trades. They were all subject to the English law prohibiting conspiracies and combinations in restraint of trade, though it does not appear that such law was ever put in force in Australia. The main object of the early unions in Australia was the limitation of the working week to forty-eight hours. The minor and friendly society benefits that were usual amongst the unions of older countries were also desired; but the chief aim was the establishment of the eight hours' principle, and that aim for many years was the chief link between the unions. It is difficult to obtain detailed information concerning the unions prior to trade union legislation, but their early history generally resolves itself into an account of the early efforts put forth by metropolitan operatives to secure the limitation of the working day to eight hours.

(ii.) *New Zealand.* The system was first put into practice in Australasia in 1848 by the "Otago Association," which purchased an area of land upon Port Chalmers, N.Z., and proceeded to build the town of Dunedin, under a system which recognised the eight hours' day, thus instituting, in the New World of the south, that period of toil as the limit of the working day. Thus the system began voluntarily in New Zealand long before the unions that demanded and acquired it in Australia had come into existence. But many years elapsed in the Dominion before trades unionism became an established fact. The first Congress of New Zealand Trades was held in 1885. In that year, too, the general celebration of the eight hours' principle by the combined trades was inaugurated.

(iii.) *New South Wales.* In New South Wales, the operative masons obtained the eight hours' concession in 1855, after a strike; but little development of the movement was noticeable until 1871, in which year four eight-hour trades—the brickmakers, stonemasons, labourers, and carpenters—inaugurated the annual celebration.

(iv.) *Victoria.* The first Melbourne Eight Hours' procession was held in 1856, the trades taking part being the masons, bricklayers, carpenters and joiners, plasterers, painters, and slaters. In the following year nine trades and about 700 men took part in the function; but the principle of the Eight Hours' Day had been recognised, and new unions were quickly established under the influence and guidance of the pioneers of the movement.

(v.) *Queensland.* After the fever of the gold rush to the Fitzroy River had subsided, settled conditions prevailed in the building industry, and the trades, being well established and organised in Queensland, celebrated their inaugural festival of the eight hours in 1866. In this capital, as in Melbourne, the pioneer trade was the stonemasons.

(vi.) *South Australia.* In South Australia, the establishment of the eight hours' system by the unions was accomplished in 1873, the building trades, represented by the stone-cutters, painters, and carpenters, again being the leaders.

(vii.) *Western Australia.* The discovery of gold in Western Australia caused rapid development in the infant cities and towns of that State, and mechanics found abundant employment in the building trades. Unions were soon formed, and the eight hours became an established system in 1896.

(viii.) *Tasmania.* Trade unions were established in Tasmania in 1874, the shipwrights of Hobart being the pioneer society. Here, as on the mainland, the eight hours' day was the chief aim of the operatives, and here, as in Sydney, it was conceded only after a strike. Within a few years, the general system of trades unions was instituted. The inaugural celebration of the system was celebrated in 1890.

(ix.) *The System Universal throughout Australasia.* No provision for eight hours was made in the original documents which set out the conditions of labour under which the members of the Otago Association were to work in 1848. It was intended to insert a clause embodying the principle, but it was found that such a clause would be inoperative, as contracts to bind free settlers to serve under any conditions of labour beyond the seas were not provided for by any Imperial Statute. The system, however, was tacitly agreed to by both parties, and quietly and voluntarily the eight hours' day was established. Not so amicable were the methods by which it was acquired in the other colonies. There had to be unions of men and unions of trades, before the requisite forces were available to overbear opposition to the system, and, at any rate in two cases, the tradesmen resorted to strikes before the concession was granted. Generally it may be said that trades unions in the Commonwealth sprang out of the desire for an eight hours' day; and with the Western Australia celebration of 1896, trades unionism, with its eight hours' charter, completed its circuit of the Commonwealth. From 1880 to 1890 there was in the States where industry was systematised great activity in the organisation of labour, more particularly at the end of that period. In sympathy with the widespread industrial unrest in England the occurrence of similar unrest in Australia drew the wage-earners into the unions in large numbers: the return of industrial peace, however, was marked by a decrease in numbers.

(x.) *Organisation of Unions.* The first regular association of unions in Australia was the Trades Committee in Melbourne, formed in 1859, which afterwards became the present Trades and Labour Council. Similar councils now exist in all the States. Composed of delegates from the unions they exercise a general care over the interests of their members.

(xi.) *Union Acts.* The Trade Union Acts of England and the collateral Conspiracy and Protection of Property Act have been copied by the States, the Acts also providing for unions of employers. The latter provision has been but slightly utilised, however, as apparently it offers no well-defined inducement. South Australia adopted the Acts in 1876, New South Wales in 1881, Victoria in 1884, Queensland in 1886, Tasmania in 1889, and Western Australia in 1902.

The Acts referred to provide for the legal recognition of combinations which come under the definition of trade unions; the registration of unions of seven or more persons, the registration of councils or other bodies to which registered trade unions are affiliated, the vesting of union property in registered trustees, with penal provisions in respect of defaulting officers. The registered unions are required to furnish annual returns of members and funds to a special department.

3. **Operations and Organisation of Unions subsequent to the Acts.**—(i.) *Unions.* Except as hereinafter mentioned, the Unions do not avail themselves of the Trade Union Acts to any large extent. Information concerning them in some States is not at present available, since they do not divulge their membership and funds. The figures given for registered trade unions must not therefore be regarded as affording any criterion by which the present position of unionism may be judged. The discrepancy between the numbers of registered and unregistered unions in some States may be gauged by the fact

that there were at the close of the year 1909 seventy-four unions affiliated with the Melbourne Trades Hall, thirteen with the Bendigo, and sixteen with the Ballarat Trades Hall, making a total of 103. In Victoria only five, however, were registered, and some of the latter are not affiliated. In South Australia there were sixty-seven unions affiliated to the local Trades Council, but only twenty-four were registered. In Western Australia the number of unionists registered under the Industrial Arbitration Act was about 33 per cent. more than the number registered under the Trade Union Acts. In New South Wales the numbers were almost identical.

The failure to register under the Trade Union Acts does not deprive the unions of the privileges conferred by the Conspiracy Acts.

(ii.) *Workmen and Employers in Unions.* Available statistics at present do not shew what proportion of Australian workmen are members of trade unions, though a census of occupations would at least for some States enable an estimate to be made.

The Acts are but little availed of by employers.

(iii.) *Concerted Action.* The consummation of the eight hours' system, at which the early unions had aimed, was followed by demands for further concessions and privileges. An intercolonial congress of delegates of trades unions was first held in Sydney in 1879. At the second congress in Melbourne, in 1884, sixty-nine delegates from New South Wales, Victoria, and South Australia were present, representing forty-one unions, branches, or societies. Following the methods of European associations the Australian unions sought to achieve an improved condition for their members by the establishment of rules concerning minimum wage, limited hours of toil, the restriction of the number of apprentices and improvers, and the prohibition of the employment of non-union labour. Some of the unions refuse to admit to membership any but skilled journeymen, on the ground that their object is to encourage the attainment of proper skill.

(iv.) *Representation in Parliament.* It was during the decade 1880-1890 that the trade unions of Australia espoused direct legislative representation and advocated State interference between employer and employee. This policy has been called "new unionism." A resolution affirming the desirability of Parliamentary representation of labour being carried at the congress of 1884, a number of members representing the special interests of the wage-earners were elected to the Legislatures of some of the States, but the unions took no steps to obtain representation by men chosen from among their own ranks until after the great labour troubles of 1890-1892. In that period serious strikes occurred in the maritime, shearing, and mining industries, and it was then that the Labour party proper was formed, though a certain amount of ameliorative legislation had already found its way into the statute books of the States. Since 1890 the party has considerably influenced Australian politics. In 1904, 1908-9, and 1910-11 Labour Governments occupied the Commonwealth Treasury benches, the elections held in April, 1910, having resulted in the Labour party gaining an absolute majority in both of the Federal Houses of Parliament. The present Governments in New South Wales and South Australia are Labour. Western Australia has also had a Labour Government; and in Victoria and Queensland, the Labour party is an important element in Parliament.

Triennial federal conferences laid down a policy for the party, but at present there is no authoritative Commonwealth organisation, and the policy is not binding upon a State league. The Political Labour Council controls political and the Trades Hall Council trade union matters. The former consists of delegates from both unions and "branches." The branches are coterminous with State electoral districts, and nominate candidates for those districts. Candidates for the Commonwealth Senate are balloted for by all league members in the State, and for the Commonwealth House of Representatives by the branches in the constituency.

4. **Registered Trade Unions.**—(i.) *Unions of Employees.* The statistics of registered trade unions of employees not only do not represent the position of unionism, but, in addition, the statistics themselves for past years are so defective as to be practically value-

less. The number, etc., of these unions is therefore no guide to the position of unionism in Australia. It will be seen that some of the registered unions fail to supply returns; this non-supply may lead to cancellation of the registration. The figures at the end of 1909 were as shewn hereunder:—

REGISTERED TRADE UNIONS OF EMPLOYES, 1909.

State.	No. of Unions.	No. of Members.	Receipts.	Expenditure.	Funds.
			£	£	£
New South Wales	166	127,402	148,202	147,152	94,900
Victoria	5	8,096	4,258	4,205	4,890
Queensland	33	16,423*	16,867*	16,256*	10,078*
South Australia	25	1,692†	3,137†	2,733†	8,710†
Western Australia	122‡	17,282‡	50,345‡	48,258‡	33,232‡
Tasmania	Nil	...	...	...	...
Commonwealth ...	351	170,895§	222,809§	218,604§	151,810§

* Returns for 30 unions only, 3 having failed to furnish returns. † Returns for 5 unions only, 20 having failed to furnish returns. ‡ Industrial unions registered under the Arbitration Acts. § Excluding 20 unions in South Australia and 3 in Queensland.

(ii.) *Unions of Employers.* At the close of 1909 there were in New South Wales three unions of employers, with 1441 members; in Queensland three, with 151 members; in South Australia one, with 22 members; and in Western Australia forty-seven, with 408 members.

5. **Registration under Industrial Arbitration Acts.**—Western Australia, and New South Wales up to 30th June, 1908, were the only States with Industrial Arbitration Acts under which industrial associations could be, and actually were, registered. The number of registered unions in New South Wales shewed a gradual increase from 1902 to 1907, the figures in the latter year being 109 unions of employers, with 3165 members, and 119 unions of employees, with 88,075 members. Under the Industrial Disputes Act which has succeeded the Arbitration Act of 1901, the information is not required to be furnished. Since the Act of 1908 has operated, industrial organisation has proceeded rapidly, owing to a very evident general desire on the part of the workers to obtain the status necessary to entitle them to the advantages offered by the Act. Registration under the Trade Union Act is a condition precedent to registration under the Industrial Disputes Act, so far as new unions are concerned. This probably accounts for the large number of unions which were formed during 1909. In Western Australia, the employers' unions numbered 45, with 441 members, in 1904; 59 unions, with 520 members, in 1905; 57 unions, with 534 members, in 1906; 56 unions, with 552 members, in 1907; 48, with 409 members, in 1908; 47, with 408 members, in 1909. Unions of employees have declined in late years. At the end of 1904 and 1905 there were 140, with 15,743 and 15,461 members respectively; in 1906 there were 130 unions, with 16,015 members; in 1907, 121 unions, with 14,544 members; in 1908, 121 unions, with 15,187 members; and in 1909, 122 unions, with 17,282 members. These figures include councils and associations. Registration under Commonwealth legislation began in 1906. In that and the four following years, there was but one union of employers, with 6 members. The unions of employees numbered 20 in 1906, with 41,413 members; 24, with 57,306 members, in 1907; and 37 unions, with 69,536 members, in 1908, and 7 unions, with 14,161 members in 1909.

§ 2. Laws Relating to Conditions of Labour.

1. **Tabular Statement of Statutes affecting Labour.**—The Statutes enacted in the several States of the Commonwealth, which, more or less directly, affect the general conditions of labour, are shewn in the table below. Where merely an incidental reference to labour conditions is made in a statute, as is the case with, *e.g.*, the

Hawkers and Pedlars Act 1892 of Western Australia, or the Firms Registration Act 1899 of South Australia, the Act is not included in the table.

LABOUR LAWS—TABLE OF STATUTES.

New South Wales.	Victoria.	Queensland.	South Aust.	Western Aust.	Tasmania.
Factories & Shops 1896 Factories & Shops 1909 Early Closing 1899 " 1900 " 1906 " 1910 Saturday Half Holiday 1910 Minimum Wage 1908 Clerical Workers 1910	Factories and Shops 1905 (2) Factories and Shops 1907 Factories and Shops 1909 Factories and Shops 1910 (2)	Factories and Shops 1900 Factories and Shops 1908 Wages Boards 1908	Factories 1907 " 1908 " 1910 Early Closing 1900 " " 1901 " " 1902 " " 1903	Factories 1904 (2) Early Closing 1902 Early Closing 1904 (2) Seats for Shop Assistants 1899	Factories 1910 Wages Boards 1910 Chimn'y Sweepers 1882
Industrial Arbitration Act 1901 Industrial Arbitration Act 1905 Industrial Disputes 1908 Industrial Disputes 1909 Industrial Disputes 1910	—	—	Conciliation 1894	Industrial Conciliation and Arbitration 1902 " " 1909	—
Mines Inspection 1901 Coal Mines Regulation 1902 Coal Mines Regulation 1905 Coal Mines Regulation 1910 Miners' Accident Relief 1900 Miners' Accident Relief 1901 Miners' Accident Relief 1910	Mines 1897 Coal Mines Regulation 1909	Mining 1898 " 1901 " 1902	Mining 1893	Mines Regulation 1906 Coal Mines Regulation 1902 Mining 1904	Mining 1900
Contractors' Debts 1897	Employers and Employees 1890 Employers and Employees 1901	Contractors' & Workmen's Lien 1906 Wages 1870 " 1884	Workmen's Liens 1893 Workmen's Liens 1896	Workmen's Wages 1898	—
Attachment of Wages Limitation 1900	—	Wages (as above)	Wages Attachment 1898	—	Wages Attachment 1900
Public Health 1896	Health 1890	Health 1886 " 1890 " 1900	Health 1898 " 1909	Health 1898 " 1906 " 1911*	Public Health 1903 Public Health 1910
Truck 1900 Truck 1901	—	See Factories	See Factories	Truck 1899 " 1900 " 1904	—
Shearers' Accommodation 1901	—	Shearers' and Sugarworkers' Accommodation 1905 Do. 1906	Shearers' Accommodation 1905	—	—
—	Closer Settlement (Workers' Homes) 1904	—	—	—	
—	Boilers' Inspection 1906	Inspection of Machinery & Scaffolding 1908	Lifts' Regulation 1908 Scaffolding Inspection 1907 Scaffolding Inspection 1908	Inspection of Machinery 1904	Inspection of Machinery 1902 " " 1909

LABOUR LAWS—TABLE OF STATUTES.—Continued.

New South Wales.	Victoria.	Queensland.	South Aust.	Western Aust.	Tasmania.
—	Servants' Registry Offices 1897	—	—	Employment Brokers 1909	—
Trade Unions 1881	Trade Unions 1890	Trade Unions 1886	Trade Unions 1876	Trade Unions 1902	Trade Unions 1889
Masters & Servants 1902 Apprentices 1901	Employers and Employees 1890 " 1901 Masters and Apprentices 1890	†Apprentices 1828 " 1844 †Master and Servants 1861	Masters & Servants 1878 Defence of Workers 1909	Masters and Apprentices 1873 Masters & Servants 1892	Masters & Servants 1856 " " 1882 " " 1884 " " 1887
Employers' Liability 1897	Employers and Employees 1890 (Employers' Liability) " " 1901	Employers' Liability 1886 Employers' Liability 1888	Employers' Liability 1884 Employers' Liability 1889	Employers' Liability 1894 Workers' Compensation 1902	Employers' Liability 1895 Employers' Liability 1898 Employers' Liability 1903
Workmen's Compensation 1910		Workers' Compensation 1905 Workers' Compensation 1909 Workers' Dwelling 1909	Workmen's Compensation 1900 Workmen's Compensation 1904 Workmen's Compensation 1909	Workers' Compensation 1909 Navigation 1904 " 1907 Merchant Shipping Act Application 1903	Workers' Compensation 1910
Bankruptcy 1898 (preference to wages)	Insolvency 1897	Insolvency 1874 Insolvency 1876	Insolvency 1886 " 1887 " 1896	Bankruptcy 1892 " 1898	Bankruptcy 1870 Bankruptcy 1899
—	—	—	—	Pearl-Shell Fishery Regulation 1875 Fisheries 1905 " 1911* Conspiracy and Protection of Property 1900	—

* Reserved for assent. † New South Wales Acts.

2. **Benefits sought to be Conferred by the Acts.**—(i.) *General Provisions.* The legislation enacted has generally had for its object the shortening of hours, fixing of rates of payment, provision of sanitary accommodation, ventilation and cleansing of premises, and general amelioration of the conditions of labour, particularly that of females and children, in factories. The principal provisions of these statutes are set out in the table hereinafter.

(ii.) *Historical.* The first Australian Factories Act was passed in 1873 in Victoria, and became law on 1st January, 1874. It was entitled "The Supervision of Workrooms and Factories Statute," and contained only six sections. The existing Victorian Act, passed in 1905, contained originally 163 sections, and is now extended by four amendments of 35, 40, 6, and 54 sections respectively. There are, moreover, numerous regulations in force under its authority. The three principal provisions in the Act of 1873 were (*a*) that any place in which not less than ten persons were engaged for hire in manufacturing goods should be constituted a factory; (*b*) that such factories as to building, sanitation, etc., should be subject to regulations made by the Central Board of Health; and (*c*) that no female should be employed for more than eight hours in any one day without the permission of the Chief Secretary. The administration of the Act was entrusted entirely to the local Boards of Health, and the system was found to be less effective than was hoped. The conditions which have given rise to trouble in the old world tended to reproduce themselves in the young and growing industries of the States. Factory workers

had to contend with the absence of security for a living wage; unsatisfactory sanitary surroundings; and unchecked and unscrupulous competition of Chinese in certain trades. The advocacy of legislation to control the conditions of employment became pronounced in Victoria in 1880, and a strike of tailoresses in Melbourne in 1882 led to a recognition of the real state of affairs. As a result of unsatisfactory working under the local governing bodies, and on account of agitation of the operatives, a commission was appointed in 1883, and reported the necessity of legislation for the regulation of factories, and in particular pointed out the fact that men were compelled to toil for as many as eighteen hours and women sixteen hours a day. It also shewed that the condition of out-workers was very undesirable, and that the apprenticeship system was frequently used to obtain labour without remuneration, apprentices being dismissed upon asking for payment at the end of their time. The Factories and Shops Act 1884, while providing for the suppression of many evils in respect of accommodation and lengthy hours, did not touch the two last mentioned. It provided for Government inspection, and also that six persons should constitute a factory if the premises were situated in a city, town or borough. In 1887 a short amending Act was brought in to remedy some defects that were found to exist. Its principal provision was that any place in which two or more Chinese were engaged should be deemed a factory. In 1893 a further enactment reduced the number of persons constituting a factory to four. Another Royal Commission sat in 1895, resulting in the Act of 1896, which dealt with matters previously untouched, and the system of regulation was carried on by the Act of 1900 and the complete codification of the law in 1905.

Similar conditions were found to prevail in other States. New South Wales and Queensland adopted regulative measures in 1896 and subsequent years, and South Australia in 1894, 1900, and 1906. Western Australia followed suit in 1902 and 1904. Tasmania adopted the Victorian Act of 1873 in 1884, with a small extension in 1905; and in 1910 enacted Factories, Wages Boards, and Workers' Compensation Acts.

The same remarks apply in a general way to the condition of employees in shops.

3. **Limitation of Hours.**—(i.) *Factories.* As already remarked, the adoption of the eight hours' system for adult males has generally been the outcome of the representations made by the trade unions. Except in New Zealand, there is no general legislation to enforce the principle, although there is now a general recognition of it. A week of forty-eight hours is the usual working week. The larger unions, however, have lately moved for a *net* day of eight hours, with Saturday half-holiday, no loading of other week days being permitted by way of compensating for the Saturday afternoon. Under this scheme there are, for five days, equal divisions for periods of labour, recreation, and rest, and four hours' work on Saturday, making a working week of forty-four hours. In the majority of occupations, forty-eight hours weekly is the recognised limit of work. On the establishment of Wages Boards and Arbitration Courts, in the States where those institutions exist, the authorities thus created adopted the rule as part of their determinations and awards wherever it seemed reasonably practicable. In some of the larger classes of building trades, the hours have been reduced to forty-four a week, and in some technical and specialist trades, a lower maximum has been fixed, such for example, as the type-setting machine operators in Victoria, for whom the maximum has been fixed by the Wages Board at forty-two hours weekly. Reasonable provision is made by Statute or award for work performed outside the scheduled hours. Organisations of employees, however, oppose overtime in any industry until all the operatives in that industry are working full time.

In the case of women and children there has been very general enactment in the States of the forty-eight hours' limit, and in addition, the maximum periods of continuous labour, and the intervals of cessation therefrom, have been prescribed in all the States. Tasmanian factories' legislation deals exclusively with females and young persons. New Zealand has fixed a weekly maximum of forty-five hours for females and boys under 16. The first enactment of the forty-eight hours' limit in Australia was in 1873, when the Parliament of Victoria fixed that period for women and girls in factories.

(ii.) *Shops.* All the States have statutes containing provisions respecting the hours during which shops in large centres may be kept open for business. These provisions, in effect, not only limit the hours during which shop-hands may be employed, but apply also where the shops are tended by the proprietor alone, or by himself and family, with, however, certain exceptions, such as exist in the State of Victoria. In that State shops wherein not more than one assistant, whether paid or not, is employed, are permitted to remain open for two hours a day longer than other shops of the same class. The object of this is to relieve the hardship which exists for such persons, for example, as widows who are wholly dependent for a livelihood upon the casual trade of small shops. It is, however, reported that little or no benefit has accrued from the permission. In New South Wales, Victoria, Queensland, South Australia, and Western Australia the closing time of shops, except those specially exempted, is 6 p.m. on four days of the week, 10 p.m. on one day (except 9 p.m. in South Australia), and 1 p.m. on one day—thus establishing a weekly half-holiday. In Western Australia the opening hour is fixed at 8 a.m. In addition to fixing the closing hour, the total daily and weekly working hours are delimited in the case of women and children. In some States, butchers' shops must be closed an hour earlier than other retail establishments, the reason being the early hour at which assistants must start to attend to the markets and early morning trade.

(iii.) *Hotels, etc.* Establishments, the opening of which in the evening is presumably necessary for public convenience—such as hotels, restaurants, chemists' shops, etc.—are required to remain open for longer hours or are permitted to do business during hours prohibited in other establishments.

(iv.) *Half-holidays.* The provisions of the early closing laws differ somewhat in each State, but the main objects, namely, the restriction of long hours of labour, are identical throughout. Formerly, in some of the States, there were, and there are still in others, provisions making the early closing of a business, or the selection of a day for a half-holiday, dependent upon the option of the majority of the business people concerned, or upon the local authority. The anomalous results of the system whereby shops on one side of the street bounding two municipalities were open, when those upon the other side were closed, led to the introduction of the compulsory system, whereby the hours of business are absolutely fixed by statute. In Queensland, the day of the weekly half-holiday is fixed for Saturday. In Victoria also the Saturday half-holiday became compulsory in 1909, and in New South Wales in the following year, and there is a strong movement throughout the Commonwealth in favour of closing on the afternoon of that day.

(v.) *Exempted Trades.* The hours for shops exempted from the general provisions of the Acts are also prescribed, and special holidays are provided for carriers.

4. **Other General Conditions of Labour.**—Measures for the protection of life, health, and general well-being of the worker, tabulated hereunder, exist in most of the States. Though in some instances founded upon English legislation, they are also in many cases peculiar to Australia. Despite experience and continued amendment they have not even yet attained to a settled form. Of the Australian States, Victoria originally had the most complete system of industrial legislation. Other States gradually adopted the Victorian statutes, either *en bloc* or with amendments suggested by local conditions. Western Australia followed very closely the legislation of New Zealand, where also the measures for the amelioration of the industrial conditions are enforced by law.

5. **Administration of Factories and Shops Acts.**—The provisions of Factories and Shops Acts and of the Early Closing Acts in some of the States are consolidated under a single Act, but in others are separate enactments. The chief provisions of the principal Acts for registration, administration, record-keeping, etc., and of regulations under those Acts, are set out in the following summary :—

(*a*) Factories are defined to be places where a certain number of persons are employed in making or preparing goods for trade or sale, or in which steam or other power is employed. In some States the employment of a Chinese, in some of any Asiatic, constitutes the place a factory.

(*b*) A Minister of the Crown administers the Act in conjunction with a Chief Inspector of Factories. Inspectors of both sexes visit the factories with full powers of entry, examination, and enquiry. Broadly speaking, these powers confer upon the Inspector the right to enter, inspect, and examine, at all reasonable hours by day and night, any factory where he has reason to think anyone is employed; to take a police constable, if necessary, to assist him in the execution of his duty; to require the production of all certificates, documents, and records kept by the occupier, in accordance with the terms of the enactments; to examine, either alone or in the presence of any other person, every person whom he finds in a factory; to make whatever examination he deems necessary to ascertain whether the provisions of the Act are complied with.

(*c*) Registration of factories before occupation is obligatory. Description of premises and statement of the work to be done must be supplied, and a certificate of suitability of premises obtained.

(*d*) A record of all employees, giving the names, ages, wages, and work of each under a certain age (18, 20, 21, etc.) must be kept and filed in the Chief Inspector's office.

(*e*) Names and addresses of district inspectors and certifying medical practitioners must be posted; also the working hours, the holidays, and the name, etc., of the employer.

(*f*) Records of out-work must be kept, containing the names and remuneration of workers, and stating the places where the work is done. Out-workers are required to register.

(*g*) Places in which only the near kin of the occupier are employed are generally exempt from registration.

(*h*) Meals may be prohibited in workrooms, etc. In some States occupiers are required to furnish suitable mealrooms.

(*i*) The employment in factories of young children is forbidden, and medical certificates of fitness are required in the case of young persons under a certain age. Special permits, based on educational or other qualifications, may be issued for young persons of certain ages.

(*j*) Guarantees of an employee's good behaviour are void unless made with the consent of the Minister.

(*k*) Persons in charge of steam engines or boilers must hold certificates of service or competency.

(*l*) Provision safeguarding against accident is made for the fencing off and proper care of machinery, vats, and other dangerous structures. Women and young persons are forbidden to clean machinery in motion or work between fixed and traversing parts of self-acting machinery while in motion; and dangerous trades are specified in which a minimum age is fixed. Notice of accidents must be sent to the district inspector. (Dangerous trades are generally under the administration of Boards of Health.)

(*m*) Provision is made for the stamping of furniture, in order to disclose the manufacturer, and whether it is made by European or Chinese labour.

(*n*) Minimum wage provisions are inserted. Premiums to employers are forbidden.

(*o*) Sanitation and ventilation must be attended to, and fresh drinking water supplied. Separate and adequate sanitary conveniences for each sex are required.

(*p*) Shopkeepers are required to provide proper seating accommodation for female employees. (In some States this is the subject of special legislation.)

(*q*) A dressing-room for females must be provided in factories the manufacturing process of which requires a change of dress.

(*r*) Adequate protection must be against fire and efficient fire-escapes provided.

(*s*) Wide powers of regulation are granted to the Executive and large penalties imposed, including a penalty by way of compensation to any person injured or the family of any person killed through failure to fence machinery and other dangerous structures.

6. **Registered Factories.**—The number of establishments registered under Factories Acts is shewn below, and is of interest as indicating the extent to which the Factories Acts apply:—

FACTORIES REGISTERED UNDER ACTS, 1910.

State.	No. of Registered Factories.	Numbers Employed.		
		Males.	Females.	Total.
New South Wales	4,219	50,590	23,942	74,532
Victoria	5,248	46,114	33,234	79,348
Queensland	1,995	16,793	7,330	24,123
South Australia*	1,628	11,326	4,700	16,026
Western Australia†... ...	812	7,495	2,285	9,780
Tasmania‡	...	...	...	...
Commonwealth	13,902	132,318	71,491	203,809

* Metropolitan area only. † Figures for 1909. ‡ General Factories Acts not operative before 1911.

7. **Mining Acts.**—Mining Acts regulate the working of mines. Generally the employment underground of females and of boys under fourteen years is prohibited. No boy under seventeen years may be employed as lander or braceman at any plat or landing place; no lander, braceman, underground worker, or man in charge of motive power may be employed more than eight hours a day. A large number of scientific provisions for the protection of the lives and health of miners is also inserted in the Acts. Engine-drivers must hold certificates of competency. Persons may be licensed to certify to the condition of boilers. Provision is made to enable injured persons or the relatives of persons killed to recover damages if the injury or death results from a breach of the regulations referred to above. Inspection of mines is fully provided for. Sunday labour is forbidden. In New South Wales and (since 1st February, 1910) Victoria still more advanced mining legislation exists; numerous sections are designed to ensure the well-being of the workers, such as limitation of hours, etc.

8. **Other Acts.**—The British *Employers' Liability Acts*, and in some States the *Workmen's Compensation Act* 1897, have been adopted. In some States the provisions of the former are extended to seamen. Other legislation regulating conditions of labour has been enacted by the States. The British *Conspiracy and Protection of Property Act* (38 and 39 Vic., c. 86) has been adopted. Servants' registry offices are placed under administrative control, and the rates of commission chargeable are fixed by regulation. Power is given to workmen to attach moneys due to a contractor who employs them in order to satisfy a claim for wages, such wages being made a first charge on moneys due to a contractor. Workmen are given a lien for wages over material whereon they are working, even if it becomes part of other property. This is in addition to the common law lien, which ceases when possession of the property is parted with. Workmen's wages are protected from attachment. In Victoria, provision is made for the compulsory resumption of suburban lands to provide workmen's homes.

9. **General Results of Industrial Legislation.**—The results of the legislation described must be sought in the Reports of the Inspectors of Factories of the several States. Generally speaking, the perusal of these reports and of the reports of Royal Commissions which have enquired into the working of the Acts, affords satisfactory evidence that the Acts have, on the whole, effected their objects.

10. **Comparative Statement of Factories Law in Australia and New Zealand.**—The tables which follow shew at a glance the chief provisions of the Factories and Shops Acts in the Commonwealth and in New Zealand.

COMPARATIVE VIEW OF LEADING FEATURES OF THE LA

HEADING.	NEW SOUTH WALES.	VICTORIA.	QUEENSLAND.
Principal Acts.	Factories and Shops 1896. " " 1909. Minimum Wage 1908.	Factories and Shops 1905 (2). " " 1907. " " 1909. " " 1910 (2).	Factories and Shops 190 " " 190 Wages Boards 1908.
Application of Acts—Limitations.	In districts proclaimed Not applicable where all the workers are members of the same family. Not applicable to woolsheds, dairies, or ships. Governor may exempt any factory or class of factory in any district.	In cities, towns and boroughs, but may be extended to shires or parts thereof. Not applicable to dairying, agricultural, horticultural, viticultural and pastoral occupations. Not applicable to laundries attached to religious and charitable institutions.	Only in areas proclaime Not applicable to prison formatories, dairies, sh mines, agricultural b ings, and domestic w shops. Governor may exempt p ally or wholly any fac or class of factories given district.
Definition of Factory— By Nos. Employed	Four or more.	Four or more.	Two or more (includ occupier).
" Asiatics "	Any Chinese.	One Chinese.	One Asiatic.
" Power used	Steam or mechanical.	Steam or mechanical.	Steam or mechanical.
" Special classes included	Laundries, dye-works.	Bakehouses, laundries, dye-works, quarries, clay-pits. Gas & electric light works	Bakehouses, laundries.
Administration.	Minister of Labour.	Minister of Labour.	Home Secretary.
Inspectorate.	Inspectors with full powers of entry, examination and enquiry.	Inspectors with full powers of entry, examination and enquiry.	Inspectors with full powe entry, examination, enquiry.
Registration.	Seven days' prior notice.	Fourteen days' prior notice. Annual re-registration.	Seven days' prior notice
Outwork.	Occupier of factory to keep record, shewing places where work done and rates of payment.	Occupier to keep record of description, quantity, remuneration, and names. Out-workers must register.	Sub-contractors' prem subject to factory re tions. Occupier to records shewing place scription, and qualit work; nature and am of remuneration paid. workers must register Sub-letting forbidden.
Hours of Work.	Adult males—not enacted. Females and young persons —see separate table.	Adult males—not enacted. Females and young persons —see separate table.	Adult males—not enacte Females and young per —see separate table.
Meals in Workroom.	Minister may forbid while work is going on; he may require provision of a suitable eating-room.	Forbidden while work going on, unless Inspector permits. Forbidden if dangerous trade conducted.	Minister may forbid m being taken in facto he may require prov of suitable eating roo
Employment of Women & Children.	See separate table.	See separate table.	See separate table.
Sanitary, Health and Safety Provisions.	Factories to be clean, wholesome, and well ventilated. Over-crowding forbidden. Unhealthy persons under sixteen may be suspended from daily work. Avoidance of infection prescribed. Factories to be thoroughly cleaned once in fourteen months. Bakehouses not to be used as sleeping places. Seats to be provided for females. Proper necessary precautions to be taken against fire, and efficient fire escapes to be provided.	Factories to be clean, wholesome, and well ventilated. Over-crowding forbidden. Factories to be thoroughly cleaned once in fourteen months. Factories and bakehouses not to be used as sleeping places. Wet spinners must be protected. Efficient fire escapes to be provided, and fire appliances kept ready.	Factories to be kept c wholesome, and well v lated. Over-crowding forbidde Suspension of work by healthy persons may enforced. Avoidance of infection scribed. Fresh drinking water t provided. Factories to be thorou cleaned once in tw months. Bakehouses not to be as sleeping places. Seats to be provided fo males. Proper necessary precau to be taken against fir
Dangerous Machinery	Must be fenced Employment of women and boys forbidden.	Must be fenced. Employment of women and boys forbidden. First-aid ambulance-chest to be kept on premises.	Must be fenced.
Minimum Wage— Per week	4s. No premiums or bonus on behalf of apprentices is permitted.	2s. 6d. No premium is to be demanded from female apprentices and improvers.	2s. 6d. No premium is perm from apprentices.

RELATING TO FACTORIES IN AUSTRALIA AND NEW ZEALAND.

SOUTH AUSTRALIA.	WESTERN AUSTRALIA.	TASMANIA.	NEW ZEALAND.
ictories 1907. „ 1908. „ 1910.	Factories 1904 (2).	Factories 1910.	Factories Act 1901. „ „ 1902. „ „ 1905. „ „ 1906.
places determined by the House of Assembly. ot applicable to domestic servants and agricultural and pastoral pursuits.	In districts proclaimed. Not applicable to mines, dairies, ships, prisons, reformatories, domestic (other than Asiatic) workshops. Governor may exempt any factory	Whole State. Not applicable to mines, ships, prisons, reformatories, dairying, agricultural, horticultural or pastoral industries. Not applicable to charitable institutions. Governor may exempt any factory.	...
nyone.	Six or more. One Asiatic. Steam or mechanical. Bakehouses, laundries.	Four or more. One Asiatic. Steam or mechanical. Bakehouses, quarries.	Two or more. One alien Asiatic. Steam or mechanical. Bakehouses, laundries.
inister of Industry.	Minister of Commerce and Labour.	Chief Secretary.	Minister of Labour.
ispectors with full powers of entry, examination and enquiry.	Inspectors with full powers of entry, examination and enquiry.	Inspectors with full powers of entry, examination and enquiry.	Inspectors with full powers of entry, examination and enquiry.
wenty-one days' prior notice.	Prior notice. Annual re-registration if Asiatics employed.	Twenty-one days' prior notice.	Prior notice.
ccupier to keep record. Out-workers to register names and addresses.	Occupier to keep record of names and addresses, and quantity and description of work done. Sub-letting forbidden.	Occupier to keep record of names and addresses, and quantity and description of work done.	Occupier to keep record shewing names and addresses of out-workers, quality and description of work done, and the nature and amount of remuneration. Sub-contracting in textiles forbidden.
dult males—not enacted. emales and young persons —see separate table.	Adult males—not enacted. Females and young persons —see separate table.	Adult males — not enacted. Females and young persons—see separate table.	Males, over 16: Maximum, forty-eight hours weekly. Overtime of adult males not regulated. Females and young persons —see separate table.
linister may forbid meals in factories carrying on noxious trades; he may require provision of suitable eating-room.	Forbidden for women and boys, except with Inspector's written permission.	Forbidden in room where employees are working. In certain specified factories, a fit and proper meal room to be provided,—but Chief Inspector may exempt.	Forbidden for women and boys. If number exceeds four, a suitable meal room is to be provided.
ee separate table	See separate table.	See separate table.	See separate table.
actories to be kept wholesome, clean, and well ventilated. ver-crowding forbidden. actories to be thoroughly cleaned once in fourteen months. dequate protection to be made against fire.	Factories and connected yards to be clean, wholesome, and well-ventilated. Over-crowding forbidden. Unhealthy persons may be forced to suspend work. Goods, clothing, etc., to be disinfected where necessary. Fresh drinking water to be provided. Thorough cleaning to be regularly done. Bakehouses not to be used as sleeping places. Efficient fire escapes to be provided and other necessary protection to be made against fire.	Factories to be clean, wholesome and well ventilated. Overcrowding forbidden. Factories may be required to be cleaned once in fourteen months. Factories not to be used as sleeping places. Doors, &c., to be kept clear of obstructions, and fire-prevention appliances kept ready for use.	Factories to be clean, wholesome & properly ventilated. Overcrowding forbidden. Unhealthy persons may be forced to suspend work. Goods, clothing, etc., to be disinfected where necessary. Pure drinking water to be provided. Factories to be cleaned once in fourteen months. Bakehouse not to be used as sleeping place. Satisfactory provision for women and boys to be made against wet and steam in factories where wet spinning is carried on. Efficient fire escapes to be provided.
ust be fenced. mployment of children under sixteen may be forbidden.	Must be fenced. Any machine may be prohibited by Inspector as dangerous. Employment of females and boys forbidden.	...	Must be fenced. Any machine may be prohibited by Inspector as dangerous.
s. lo premium is to be paid by female apprentices.	...	4s. No premium in respect to employment is permitted.	5s. No premium in respect to employment is to be paid.

FACTORIES ACTS.—AUSTRALIA AND NEW ZEALAND

HEADING.	NEW SOUTH WALES.	VICTORIA.	QUEENSLAND.
Acts Application of Acts	As in preceding table	As in preceding table	As in preceding ta
*Ordinary Age of Admission to Factory	14	13	14
Maximum Working Hours of Women and Young Persons — Per week	Females and boys under 16, 48 hours	Females and boys under 16, 48 hours	Females and b under 16, 48 hou
„ day	...	Do., 10 hours	...
Maximum hours of continuous labour	Females and boys under 18, 5 hours	Females and boys under 18, 5 hours	Do., 5 hours
Interval	Do., ½ hour	Do., ½ hour	Do., ½ hour
Prohibited Hours of Work	Girls under 18, 7 p.m. to 6 a.m.	Girls under 16, 6 p.m. to 6 a.m.	Girls under 18, 6 to 6 a.m.
	Boys under 16, 7 p.m. to 6 a.m.	Boys under 14, 6 p.m. to 6 a.m. Females, after 9 p.m.	Boys under 18, 6 to 6 a.m.
Overtime— Limitation—Per day	Three hours	Three hours	Three hours
„ week	Three days	One day	Two consec'tive Fifty-six hrs pe not to be exce
„ year	Thirty days	Twenty-five days	Forty days
Continuous			
Overtime Pay	One and a-half ordinary rate	One and a-half ordinary rate	One and a-half or ary rate, but n below 6d. per ho
Prohibition of Employment after Childbirth	4 weeks	...	...
Restrictions and Prohibitions of Employment affecting Women and Young Persons in Dangerous Trades — Type-setting	Young persons under 16	Boys and girls under 14	...
Dry grinding and match dipping	Young persons under 16	Boys and girls under 18	...
Manufacture of bricks and tiles	Girls under 18	Girls under 18	...
Making and finishing of salt	Girls under 18	Girls under 18	...
Melting or annealing of glass	Boys under 16; girls under 18	Boys under 14; girls under 18	...
Silvering of mirrors by mercurial process; manufacture of white lead	Boys and girls under 18	Young persons under 18	...
Cleaning of machinery in motion, mill gearing, etc.	All females; boys under 18	All females; boys under 18	All females; b under 18
Charge of lift	All females; boys under 16	...	All females; b under 16

* The ages given are those at which admission to factory labour is unrestricted. In some States younger children are admitted if having passed school standards, or by special permit from the Minister or inspector.

RESTRICTIONS REGARDING WOMEN AND YOUNG PERSONS IN FACTORIES.

SOUTH AUSTRALIA.	WESTERN AUSTRALIA.	TASMANIA.	NEW ZEALAND.
As in preceding table	As in preceding table	As in preceding table	As in preceding table
13	14	13	16
Females and boys under 16, 48 hours Do., 10 hours Do., 5 hours Do., 1 hour	Females and boys under 14, 48 hours Do., 8¾ hours Do., 5 hours Do., ¾ hour	Females and boys under 16, 48 hours Females, 10 hours Boys and girls under 14, 8 hours Women and boys and girls under 18, 5 hrs. Children, 4 hours Females and young persons, 1 hour	†Females and boys under 16, 45 hours Do., 8½ hours Do., 4½ hours Do., ¾ hour
Females, after 9 p.m. Boys under 16, after 9 p.m.	Females, 6 p.m. to 8 a.m. Boys under 14, 6 p.m. to 7.45 a.m.	Females and boys under 16, after 9 p.m. ...	Females, 6 p.m. to 8 a.m. Boys under 16, 6 p.m. to 7.45 a.m.
... Nine hours per week 100 hours Five-fourths ordinary rate	Three hours Two consecutive days Thirty days ...	55 hours per week not to be exceeded ... 200 hours (Fruit, jam, etc., factories exempted in certain months) Five-fourths ordinary rate	Three hours Two consecutive days Thirty days Four hours, with half-hour interval Five-fourths ordinary rate
...	4 weeks	...	4 weeks
...	Girls under 15	...	Girls under 15
...	...	Girls under 16	Young persons under 16
...	Girls under 16	Girls under 16	Girls under 16
...	Girls under 16	Girls under 16	Girls under 16
...	...	Young persons under 18	Girls under 18
...	All females; boys under 18	All females and boys under 18	Females; boys under 18
All females; boys under 16	All females; boys under 18	...	...
All females; boys under 18	Females under 21; boys under 16	...	...

†In woollen mills in New Zealand females and boys under 16 may work slightly longer hours.

COMPARATIVE VIEW OF LEADING FEATURES OF THE

HEADING.	NEW SOUTH WALES.	VICTORIA.	QUEENSLA
Acts	As for factories Early Closing Act Minimum Wage Act	As for factories	As for factorie
Maximum Hours of Employment— Males	...	52 hours per week	...
Maximum Hours of Employment — Females and Boys — per week	Girls under 18, boys under 16, 52 hours	Females and boys under 16, 52 hours	Females and under 16, 52
Maximum Hours of Employment — Females and Boys — per day	Girls under 18, boys under 16, 9½ hours (except 1 day, 11½ hours)	Females and boys under 16, 9 hours (except 1 day, 11 hours)	Females and under 16, 9 (except 1 d hours)
Maximum Hours of Employment — Maximum continuously	All females : 5 hours	Females and boys under 18, 5 hours	...
Maximum Hours of Employment — Interval	All females : ½ hour	Females and boys under 18, ½ hour	...
Overtime — per day	...	...	3 hours
Overtime — per year	...	...	40 days
General closing time	4 days, 6 p.m.; Fridays, 10 p.m.; Saturdays, 1 p.m.	4 days, 6 p.m.; Saturdays, 1 p.m.; Fridays, 10 p.m.	4 days, 6 p.m. 10 p.m.; Sat 1 p.m.
Exemption from closing time	Certain shops	Businesses concerned with drugs and edibles, also hairdressers and pawnbrokers	Certain exe shops
Seats in Shops	1 to 3 females	1 to 3 assistants	1 to 3 females

§ 3. Legislative Regulation of Wages and Terms of Contract.

1. **General.**—Two systems, based upon different principles, exist in Australia for the regulation of wages and general terms of contracts of employment. A "Wages Board" system exists in New South Wales, Victoria, Queensland, South Australia, and Tasmania, and an Arbitration Court in Western Australia. In New South Wales, Industrial Arbitration Acts of 1901 and 1905 instituted an Arbitration Court. This court expired on 30th June, 1908, having delivered its last judgment on the previous day. Wages Boards were substituted under the Industrial Disputes Act 1908. A Wages Board Act, to come into operation in Tasmania when proclaimed, was assented to on 13th January, 1911. There is also the Arbitration Court of the Commonwealth, which has power, however, to deal only with matters extending beyond the limits of a single State. New Zealand has an Arbitration Court for regulating wages.

2. **Wages Boards.**—(i.) *Historical.* This system was introduced in Victoria by the Factories and Shops Act of 1896. The original Bill made provision only for the regulation of the wages of women and children, but was afterwards amended in Parliament to extend the system to adult operatives of both sexes.

The Act of 1896 made provision for the regulation of wages only in the clothing and furniture trades and the bread-making and butchering trades. By an Act of 1900 the operations of the Act were extended to include all persons employed either inside or outside a "factory" or "workroom"—see sec. 4, i. (*a*) —in any trade usually carried on therein. This section is now in the Act of 1905. The Act of 1907 extended the system to trades and businesses not connected in any way with factories, making provision for the appointment of Wages Boards for metropolitan shop employees, carters and drivers,

RELATING TO SHOPS IN AUSTRALIA AND NEW ZEALAND.

SOUTH AUSTRALIA.	WESTERN AUSTRALIA.	TASMANIA.	NEW ZEALAND.
t in aid of early closing, 1900 " " 1901 " " 1902 " " 1903	No. 24 of 1902 No. 1 of 1904 No. 52 of 1904	As for factories	Shops and Offices 1904 " " 1905
...	56 hours per week	...	52 hours per week
ys and girls under 16, ours ys and girls under 16, 9 ours (except 11 hours on 1 ay)	All persons, 56 hours per week ... One hour interval between noon and 3 p.m. If open after 6.30 p.m., 1 hour for tea	Females and boys under 16, 52 hours Females and boys under 16, 9 hours (except 12 hours on 1 day) Females and boys under 16, 5 hours Females and boys under 16, ½ hour	Females and boys under 18, 52 hours Females and boys under 18, 9½ hours ... ...
ours days	3 hours 12 days per half-year	3 hours 40 days	3 hours 30 days
ays, 6 p.m.; 1 day, 9 p.m.; day, 1 p.m.	4 days, 6 p.m.; 1 day, 10 p.m; 1 day, 1 p.m. (Opening hour not earlier than 8 a.m.)	(not enacted)	4 days, 6 or 7 p.m.; 1 day, 9 p.m.; 1 day, 1 p.m.
rtain classes of shops	Shops such as hairdressers, newsagents, and those selling drugs and edibles	...	Shops concerned with sale of food
...	1 to 3 women	1 to 3 females	Reasonable sitting accommodation for females

persons employed in connection with buildings or quarrying, or the preparation of firewood for sale or the distribution of wood, coke, or coal. The Act of 1909 extended the system to the mining industry, and those of 1910 extended the operation of the Acts to shires.

The regulation is effected by a Board, called a Special Board, to distinguish it from the Board of Health. Boards for the regulation of wages in the trades specified in the Act of 1896 are appointed as a matter of course, and by the Executive other Boards are appointed only if a resolution for appointment be passed by both Houses of Parliament. Originally the Board was elected in the first instance, but the difficulty of compiling electoral rolls led to the adoption of the system of nomination, which has proved satisfactory.

The Board fixes the wages and hours of work and may limit the number of "improvers" to be employed (usually by prescribing so many to each journeyman employed). There is no power in Victoria to limit the number of apprentices employed, but such a power does exist in other States. The Board fixes the wages of apprentices and improvers according to age, sex, and experience, and may fix a graduated scale of rates calculated on the same basis. Apprentices bound for less than three years are improvers, unless the Minister sanctions a shorter period of apprenticeship on account of previous experience in the trade. The Minister may sanction the employment of an improver over twenty-one years of age at a rate proportionate to his experience. Outworkers in the clothing trade must be paid piece rates. Manufacturers may, by leave of the Board, fix their own piece rates, if calculated upon the average wages of time workers as fixed by the Board.

Licenses for twelve months to work at a fixed rate lower than the minimum rate may be granted by the Chief Inspector of Factories to persons unable to obtain employment by reason of age, slowness, or infirmity. Licenses are renewable.

Penalties are fixed for the direct or indirect contravention of determinations, the obedience to which is ascertained by examination of the records of wages, etc.

A Court of Appeal has power to review determinations of the Boards.

The Acts fix an absolute weekly minimum wage, and the evasion of this provision (such as had occurred regarding females employed in the clothing trade), by charging an apprenticeship premium, is prevented by the prohibition of all such premiums. Until the Minimum Wages Act of 1908 began to operate, this absolute minimum provision did not exist in New South Wales.

South Australia enacted the Wages Board system in 1900, 1904, and 1906, but the first-mentioned Act was rendered inoperative owing to the disallowance by Parliament of the regulations necessary for carrying it into effect. The Act of 1904 revived the Wages Board system respecting women and children employed in clothing and whitework trades. The action of this statute was paralysed by a decision, the effect of which was to prevent the fixing of a graduated scale of wages as is done by the Victorian Boards. The necessity for some protection to the persons intended to be benefited by these statutes was urged in the annual reports of the Chief Inspector of Factories, but, until 1906, without effect. Many employers, however, voluntarily complied with the Boards' determinations, though these were without legal force. The system was brought into full operation by the Act of 1906, which preceded the Victorian Act of 1907, in extending the system to other than factory trades, and was of a wider scope than the Victorian Act.

The system is also in operation in New South Wales and Queensland, and will come into operation in Tasmania during 1911. In Western Australia the object is attained under the Arbitration Court system.

It is claimed that the efficacy of the Wages Board system is proved by the increasing anxiety of trades which have not yet been allowed to come under it, to take advantage of it, and apply its benefits to their own conditions.

(ii.) *Mode of Constitution.* The following statement is taken from the Report of the Chief Inspector of Factories, Victoria, for 1907. It is still applicable in that State, and is interesting, in view of the very general movement throughout Australia towards the constitution of Wages Boards. The method is not precisely the same in the different States, but that of Victoria is given as being the State in which the system was first introduced, and has had most remarkable development:—

"The constitution of a Board, and the appointment of the members of a Board, involve two distinct procedures. Before a Special Board is constituted, it is necessary that a resolution in favour of such a course should be carried in both Houses of the Legislature. It is usual for the Minister administering the Factories Act to move that such a resolution should be passed. He may be induced to adopt such a course, either by representations made by employers and employees, or by employees alone, or by the reports of the officers of the department. The reasons alleged by employers for desiring a Board are, usually, unfair competition; and those by employees, low wages, and often the employment of excessive juvenile labour. If the Minister is satisfied that a case has been made out, he will move the necessary resolution in Parliament, and when such resolution has been carried, an Order-in-Council is passed constituting the Board. The Order indicates the number of members to sit on the Board. The number of members must not be less than four nor more than ten. The Minister then invites, in the daily press, nominations for the requisite number of representatives of employers and employees. These representatives must be, or have been, employers or employees, as the case may be, actually engaged in the trade to be affected. All that is necessary is, that the full names and addresses of persons willing to act should be sent in. Where there are associations of employers or employees, it is not often that more than the necessary number of nominations are received. In any case, the Minister selects from the persons whose names are sent in, the necessary number to make up a full Board. The names of persons so nominated by the Minister are published in the *Government Gazette*, and

unless within twenty-one days, one-fifth of the employers, or one-fifth of the employees, as the case may be, forward a notice in writing to the Minister that they object to such nominations, the persons so nominated are appointed members of the Board by the Governor-in-Council. If one-fifth of the employers or employees object to the persons nominated by the Minister—and they must object to all the nominations, and not to individuals—an election is held under Regulations made in accordance with the Act. Shortly stated, employers have from one to four votes, according to the size of the factories carried on, as regards the election of employers, but as regards Special Boards for shops, each employer has only one vote; and each employee in the trade, over eighteen years of age, has a vote for the election of representatives of employees. The Chief Inspector conducts such elections, the voting is by post, the ballot papers being forwarded to each elector. Within a few days of their appointment, the members are invited to meet in a room at the office of the Chief Inspector of Factories, and a person (always a Government officer, and usually an officer of the Chief Inspector's department), is appointed to act as secretary. The members must elect a chairman within fourteen days of the date of their appointment, and if they cannot agree to a chairman, he is appointed by the Governor-in-Council. The times of meeting, the mode of carrying on business, and all procedure, is in future entirely in the hands of the Board. Vacancies in Special Boards, and, because of the preponderance of Chinese, all appointments of members of the Furniture Board, are filled on the nomination of the Minister without any possibility of either employer or employee objecting. The result of the labours of a Board is called a "Determination," and each item of such determination must be carried by a majority of the Board. It will be seen that, unless employers and employees agree, a full attendance of the Board is required, as, in case of a difference of opinon, the chairman decides the matter, and he has only one vote, the same as any other member of the Board. When a determination has been finally made, it must be signed by the chairman, and forwarded to the Minister of Labour. The Board fixes a date on which the determination shall come into force, but this date cannot be within thirty days of its signature by the chairman. If the Minister is satisfied the determination is in form, and can be enforced, it is duly gazetted. In the event of the Minister considering that any determination may cause injury to trade, or injustice in any way whatever, he may suspend same for any period, not exceeding six months, and the Board is then required to consider the determination. If the Board does not make any alteration, and is satisfied that the fears are groundless, the suspension may be removed by notice in the *Government Gazette*. This power is not, however, likely to be used by the Minister, as provision is now made by which either employers or employees may appeal to the Court of Industrial Appeals against any determination of a Board. This Court consists of any one of the judges of the Supreme Court, sitting alone, and the judges arrange which of them shall for the time being constitute the Court. An appeal may be lodged (*a*) by a majority of the representatives of the employers on the Special Board; (*b*) a majority of the representatives of employees on the Special Board; (*c*) any employer or group of employers, who employ not less than 25 per cent. of the total number of workers in the trade to be affected; or, (*d*) 25 per cent. of the workers in any trade. The Court has all the powers of a Special Board, and may alter or amend the determination in any way it thinks fit. The decision of the Court is final, and cannot be altered by the Board, except with the permission of the Court, but the Court may, at any time, review its own decision. The Minister has power to refer any determination of a Board to the Court for its consideration, if he thinks fit, without appeal by either employer or employee. The decision of the Court is gazetted in the same way as the determination of the Board, and comes into force at any date the Court may fix. The determinations of the Board and the Court are enforced by the Factories and Shops Department, and severe penalties are provided for breaches of determination. No proceedings for breaches of the determination can be taken by any one without the sanction of the Department. Any employee, however, may sue an employer for any wages due to him under any determination, notwithstanding any contract or agreement expressed or implied to the contrary."

(iii.) *Special Minimum Wage Provisions.* At the end of 1908 the Minimum Wage Act was passed in New South Wales. A summary of the provisions of this enactment, and a statement of some of the ills it was intended to meet, as set out in the departmental reports, will serve as an indication of the general trend of public feeling in regard to employees throughout the Commonwealth. The Act provides for a weekly wage of not less than four shillings to all persons coming within the definition of "workman" or "shop assistant." That such a measure was necessary is evidenced by the fact that in the workrooms in the Metropolitan district no less than 514 girls, whose ages ranged from 13 to 21 years, were, at the end of 1908, in receipt of less than four shillings per week, and in the Newcastle district there were 272 girls employed in the dressmaking and millinery workrooms receiving less than four shillings a week, the majority being paid no wages at all for their services. The Minimum Wage Act applies to persons coming within the definition of "shop assistant" in terms of the Early Closing Act. A minimum rate of threepence per hour or portion of an hour is to be paid when overtime is worked at intervals of not more than one month, and a sum of not less than sixpence as tea-money is to be paid on the day the overtime is worked. The payment of a premium or bonus on behalf of employees in connection with the manufacture of articles of clothing or wearing apparel is prohibited. The system of so-called apprenticeship without payment originally carried with it the recognition of an obligation to teach the trade, especially in the dressmaking and millinery industry. This aspect of the case had, to a very great extent, been forgotten in the large workrooms, the training received for some time being more that of general discipline than of a technical character. With a minimum wage of four shillings, an employer will find it worth while to teach her employees, so as to bring in a return, in work, for the outlay as speedily as possibly, and discharges of partially-trained workers will be less frequent. It is expected that the trades will also be improved by the weeding out of those who fail to show reasonable aptitude for their work. It is hoped that the provisions of the Act will result in considerably less overtime being worked by the younger girls, who are the persons chiefly affected by its provisions.

(iv.) *Comparison with Functions of Boards of Conciliation in Britain.* It may be noted that the Boards of Conciliation, appointed in England under the Conciliation Act 1897, appear to correspond to the Australian Wages Boards in a remarkable degree, and not in any way to the Arbitration Courts of Australia, inasmuch as they are appointed for each trade or calling, and not to adjudicate generally upon any cases which come before them. Eminent success attended the Board of Trade's conciliatory efforts in the settlement of industrial disputes in 1909. The disastrous struggles of the previous year in the shipbuilding, engineering, and kindred industries had no counterpart, the good offices of the Board of Trade tiding over the two serious labour troubles, viz., that in the South Wales coal field, arising out of the operation of the new Mines Eight Hours Act, and that in the Scottish coal trade, regarding a proposed reduction in wages.

3. **The Arbitration Court System.**—(i.) *Acts in Force.* The following is a general account of the main features of the Compulsory Arbitration laws of Australia. A few important divergences between the Acts are noted. The New South Wales Acts expired on 30th June, 1908.

The Acts in force at the close of the year 1909 were as follows:—

South Australia: The Conciliation Act 1894.

Western Australia: The Industrial Conciliation and Arbitration Acts 1902 and 1909.

Commonwealth: The Commonwealth Conciliation and Arbitration Acts 1904, 1909, and 1910.

(ii.) *Significance of Acts.* In Victoria in 1891, and in New South Wales in 1892, Acts were passed providing for the appointment of Boards of Conciliation, to which application might be made voluntarily by the contending parties. The awards of the

Boards had not any binding force. Boards were applied for on but few occasions, their lack of power to enforce awards rendering them useless for the settlement of disputes.

The first Australian Act whereby one party could be summoned before, and, presumably, made subject as in proceedings of an ordinary court of law to the order of a court, was the South Australian Act of 1894. Its principles have been largely followed in other States, but it proved abortive in operation in its own State, and in many respects is superseded by the Wages Board system already described. Western Australia passed an Act in 1900, repealed and re-enacted with amendments in 1902, New South Wales followed in 1901. A bill introduced into the Tasmanian Parliament in 1903 was rejected by the Upper Chamber. The Commonwealth principal Act, passed in 1904, applies only to industrial disputes extending beyond the limits of a single State. In Western Australia there is under the Act a Court of Arbitration and three Boards of Conciliation. Each of the latter has a limited jurisdiction over the industrial district assigned to it, but the Boards are practically obsolete, as nearly the whole of the work under the Arbitration Act has devolved upon the Court.

(iii.) *Industrial Unions.* The Arbitration Act, framed to encourage a system of collective bargaining and to facilitate applications to the court and to assure to the worker such benefits as may be derived from organisation, virtually creates the Industrial Union. This, except in New South Wales, is quite distinct from the trades union; it is not a voluntary association, but rather an organisation necessary for the administration of the law. Industrial unions (or "organisations," as they are styled in the Commonwealth Act) may be formed by employers or employees. They must be registered, and must file annual returns of membership and funds. Unions of employers must have a minimum number of employees. In New South Wales and Western Australia the minimum is 50, under the Commonwealth Act, 100. All unions of employees must possess the following qualifications:—In New South Wales the union must be a trade union or branch thereof, or be an association of unions; in Western Australia a membership of 15, and by the Commonwealth Act a membership of 100 is required. The union rules must contain provisions for the direction of business, and, in particular, for regulating the method of making applications or agreements authorised by the Acts. In Western Australia rules must be inserted prohibiting the election to the union of men who are not employers or workers in the trade, and the use of union funds for the support of strikes and lockouts; a rule must also be inserted requiring the unions to make use of the Act. The Amending Act of 1909 regulates the binding of apprentices and terms of apprenticeship. The Commonwealth Acts forbid the employment of funds for political purposes.

(iv.) *Industrial Agreements.* Employers and employees may settle disputes and conditions of labour by industrial agreements, which are registered and have the force of awards. They are enforceable against the parties and such other organisations and persons as signify their intention to be bound by an agreement.

Failing agreement, disputes are settled by reference to the court. This consists of a judge of the Supreme Court of the State, or, in the case of the Commonwealth, of the High Court. In the States, he is assisted by two "members," who are chosen by and are appointed to represent the employers and employees respectively. Technical assessors may be called in to sit with and to advise the court.

Cases are brought before the court either by employers or employees. The consent of a majority of a union voting at a specially summoned meeting is necessary to the institution of a case; the Commonwealth Act requires the certificate of the Registrar that it is a proper case for consideration.

The powers of the court are both numerous and varied; it hears and makes awards upon all matters concerning employers and employees. The breadth of its jurisdiction may be gathered from the Commonwealth definition of industrial matters. The definition includes the principal matters dealt with by the Acts in a concise form. "Industrial

matters" include all matters relating to work, pay, wages, reward, hours, privileges, rights, or duties of employers or employees, or the mode, terms, and conditions of employment or non-employment; and in particular, without limiting the general scope of this definition, include all matters pertaining to the relations of employers and employees, and the employment, preferential employment, dismissal or non-employment of any particular persons, or of persons of any particular sex or age, or being or not being members of any organisation, association, or body, and any claim arising under an industrial agreement.

(v.) *Powers of Court.* The court may fix and enforce penalties for breaches of awards, restrain contraventions of the Acts, declare any practice or regulation to be a "common rule" of the trade, and define the limits of its observation (the Commonwealth Court has power to mitigate the hardships of the common rule), hear objections to it, and exercise all the usual powers of a court of law.

The court may prescribe a minimum rate of wage; it may also (except in Western Australia as regards employment) direct that preference of employment or service shall be given to members of unions. An opportunity is offered for objection to a preference order, and the court must be satisfied that preference is desired by a majority of the persons affected by the award who have interests in common with the applicants.

The Commonwealth Court is to bring about an amicable agreement, if possible, to conciliate and not to arbitrate, and such agreement may be made an award.

All parties represented are bound by the award, and also all parties within the ambit of a common rule or (in the case of Western Australia) giving adherence. The court possesses full powers for enforcement of awards.

In Western Australia there is also a system of Boards of Conciliation, consisting of representatives of employers and employees. These, however, are practically obsolete. They had power to make awards, which were binding if not challenged within a month after being filed, but which were almost invariably appealed from.

States have included their railway and tramway employees, and also the employees of certain other public bodies under the Acts; the section of the Commonwealth Act giving the Commonwealth Court power over State employees has been declared unconstitutional by the High Court.[1]

(vi.) *Miscellaneous.* The Commonwealth and Western Australian Acts absolutely forbid strikes and lockouts. The New South Wales Act specifically forbids them, prior to or during the pendency of a case, leaving events after the award to be dealt with by the court. Protection is afforded to officers and members of unions against dismissal merely on account of such officership or membership, or on account of their being entitled to the benefit of an award.

It has been settled by the High Court that an Arbitration Court cannot direct—

(*a*) That non-unionists seeking employment shall, as a condition of obtaining it, agree to join a union within a specified time after engagement;

(*b*) That an employer requiring labour shall, *ceteris paribus*, notify the secretary of the employees' union of the labour required.[2]

4. **Comparative Statement of Tribunals for Regulating Wages in Australia and New Zealand.**—The table on pages 1068 and 1069 shews at a glance the Acts which operate in fixing wages, their application, the constitution and function of tribunals enacted under them, and the effect and extent of the tribunals' decisions. It will be seen that in all the States, except Tasmania, where general factories legislation is not yet operative, there is machinery for the regulation of wages; and also in New Zealand.

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1 Federated Amalgamated Railway, etc., Employees *v.* N.S.W. Railway, etc., Employees. 4 C.L.R. 488).

2. Trolly, etc., Union of Sydney and Suburbs v. Master Carriers' Association of New South Wales. (2 C.L.R. 509)

5. **Movement Towards Uniformity.**—The wide difference between the development in the several States of the Commonwealth of the regulation by State institutions of the remuneration and conditions of the workers, has given rise to a desire on the part of the Commonwealth Government to secure uniformity throughout Australia by any suitable and constitutional action on the part of the Commonwealth. The provisions of States wages laws vary considerably. In New South Wales, Victoria, and Western Australia, some experience has been gained of their working. The Wages Board system is new in South Australia, Queensland, and Tasmania. The desirability of uniformity has, as already mentioned, been recognised by the New South Wales Arbitration Court, which refused the Bootmakers' Union an award which would increase the wages of its members to amounts exceeding those paid in Victoria in the same trade, the express ground of the refusal being that New South Wales manufacturers would be handicapped by the payment of a higher rate of wage than that prevailing in Victoria.

6. **Constitution Alteration Proposals.**—Two proposed laws for the alteration of the constitutional powers of the Commonwealth in regard to industries and businesses have been passed by the Commonwealth Parliament. These laws are to be submitted to the people (in the form of Referenda) on the 26th April, 1911. The first law proposes to amend section 51 of the Constitution Act (see p. 39 hereinbefore) so as to give the Commonwealth Government increased powers to deal with (*a*) trade and commerce (*b*) corporations (*c*) industrial matters, and (*d*) trusts and monopolies. The second law proposes to insert after section 51 of the Constitution Act, a section empowering the Commonwealth Government to make laws with respect to monopolies. Further particulars of these proposed laws are given in the Appendix at the end of this book.

7. **The "New Protection."**—The opinion has been expressed that a manufacturer who benefits by the Commonwealth protective tariff should charge a reasonable price for the goods which he manufactures, and should institute a fair and reasonable rate of wage and conditions of labour for his workmen.

The above view is known as the "New Protection," a phrase which, though novel, is already firmly established in Australian economic discussions, and the statutes referred to immediately hereinafter are the expressions thereof.

By the Customs Tariff 1906, increased duties were imposed upon certain classes of agricultural machinery, notably the "stripper-harvester," a machine invented in Australia, which has, to a great extent, replaced the "reaper and binder and thrashing machine" in the harvesting of wheat. By the same Act it was enacted that the machines scheduled should not be sold at a higher cash price than was thereby fixed, and that if that price should be exceeded, the Commonwealth Executive should have power, by reducing the customs duties imposed by the Act, to withdraw the tariff protection.

By the Excise Tariff Act 1906 (No. 16 of 1906), an excise of one-half the duty payable upon imported agricultural machinery was imposed upon similar machinery manufactured in Australia. But it was provided that the latter should be exempt from excise if the manufacturer thereof complied with the following condition, namely, that the goods be manufactured under conditions as to the remuneration of labour, which—

(*a*) Are declared by resolution of both Houses of the Commonwealth Parliament to be fair and reasonable;

(*b*) Are in accordance with the terms of an industrial award under the Commonwealth Conciliation and Arbitration Act 1904;

(*c*) Are in accordance with the terms of an industrial agreement filed under the last-mentioned Act;

(*d*) Are, on an application made for the purpose to the President of the Court, declared to be fair and reasonable by him or by a judge of a State court or a State industrial authority to whom he may refer the matter.

TRIBUNALS FOR THE REGULATION OF WA

PARTICULARS.	NEW SOUTH WALES.	VICTORIA.	QUEENSLA
Name of Acts	Industrial Disputes Acts 1908, 1909, and 1910	Factories and Shops Acts	The Wages Board
If Act operative	Yes	Yes	Yes
No. of Tribunals	Unlimited	Unlimited	Unlimited
Actual Tribunal	Industrial Boards, and in certain events, Industrial Court	Wages Boards	Wages Boards
How Tribunal is brought into existence	Industrial Boards by the Governor on recommendation of Industrial Court. Industrial Court constituted by Industrial Disputes Act	By a resolution of Parliament	By the Governor-
Application of Acts	To industries named in Schedule to 1908 Act, and those added by a resolution of both Houses of Parliament	To any process, trade, business, or occupation specified in a resolution.	Either the whol such part as G Council may de
How a trade is brought under review	By application to Industrial Boards	Usually by petition to Minister	By petitions and tions to Ministe
Chairman of Tribunal	Appointee of Governor on recommendation of Industrial Court. The person recommended is chosen by the parties; or failing such choice is nominated by Industrial Court	Any person elected by Board. If not elected, he is appointed by Governor-in-Council	Any person electe If not elected, h ted by Governor
No. of members of Tribunal	Chairman, and not less than two nor more than four members	Not exceeding eleven	Not less than fiv than eleven chairman)
How members are appointed	Appointed by the Governor on recommendation of Industrial Court	Nominated by Minister. But if one-fifth of employers or employees object, representatives are elected by them	By employers and respectively
Decisions — how enforced	By the Industrial Court or Industrial Registrar or Stipendiary or Police Magistrate	By Factories Department in Courts of Petty Sessions	By Factories Dep
Duration of decision	For period fixed by Tribunal —not less than one nor longer than three years	Until altered by Board	Until altered by I
Appeal against decision	To Industrial Court against decision of Boards not presided over by a judge. No appeal from Industrial Court	To the Court of Industrial Appeals	None
If suspension of decision possible	No suspension	Yes; for not more than twelve months	Yes; for not mo months
If unionism an essential part of system.	No	No	No
Any provision against strikes	Yes	No	No
To whom Tribunal's decision applies	To employers and employees	To trades	To trades

ADES IN AUSTRALIA AND NEW ZEALAND.

SOUTH AUSTRALIA.	WESTERN AUSTRALIA.	TASMANIA.	NEW ZEALAND.
Factories Acts 1907, 1908, 1910	Industrial Conciliation and Arbitration Acts 1902 and 1909	Wages Board Act 1911	Industrial Conciliation and Arbitration Act
	Yes	No	Yes
uthorised by resolution Parliament	Several Conciliation Boards. One Arbitration Court		Three Commissioners of Conciliation. One Arbitration Court
es Boards	Arbitration Court		Arbitration Court
ne Governor-in-Council	By the Act		By the Act
ades carried on in fac-ies and such other des and callings as may authorised by Parlia-nt	All occupations		All trades
etitions, etc.	By application of Union or Employer		By application of Union or individual employer
ne if chosen by Board. ot, a Stipendiary Magis-te	A Judge of the Supreme Court		A Judge of the Supreme Court
ess than five nor more n eleven, inclusive of irman	Three, including president or chairman	LEGISLATION NOT YET OPERATIVE.	Three
nployers and employees pectively	Practically by employers and employees respectively		By the Unions of Employers and workers respectively
actories Department	By Arbitration Court on complaint of any party to the award or Registrar		By Arbitration Court on complaint of Union or Inspector of Awards
altered by Board or by er of Court of Industrial peals	For period fixed by Court, not exceeding three years		For period fixed by Court, not exceeding three years
Court of Industrial peals	No appeal		No appeal
	No suspension. Power to amend for purpose of remedying defects or of giving fuller effect to award		Yes; in case of strikes
	Yes		Yes
	Yes		Yes
ades and callings	To trades		With certain exceptions to the trades concerned generally

By the Excise Tariff Act 1906 (No. 20 of 1906), excise duties are imposed in respect of spirits, and it is provided that if any distiller (i.) does not, after the Act has been passed a year, pay his employees a fair and reasonable rate of wages per week of forty-eight hours or (ii.) employs more than a due proportion of boys to men engaged in the industry, the Executive may on the advice of Parliament impose an additional duty of one shilling per gallon on spirits distilled by that distiller.

Exemptions have been claimed by the manufacturers of agricultural machinery in South Australia, New South Wales, Victoria, and Tasmania. These were granted in the two first-mentioned States in consequence of an agreement entered into between the employers and employees. In Victoria, "this whole controversial problem with its grave social and economic bearings" (to quote the words of the President of the Court) was discussed in a lengthy case upon the application for exemption by Victorian manufacturers, now widely known as the "Harvester Case," and in the report of that case may be found the legal interpretation of the Acts under consideration. The exemptions claimed were refused, and the court after discussing the meaning of the words "fair and reasonable" defined them by laying down what it considered to be a scale of fair and reasonable wages. The High Court has, however, pronounced that the legislation under these Excise Acts is unconstitutional as being an extension of Federal action beyond the powers granted, and a usurpation of the ground reserved to the States.

The Bounties Act 1907 makes provision for the encouragement of certain Australian industries by the payment to producers of certain moneys allotted by the Act upon the production of the commodities specified. The Act also provides for the refusal or reduction of a bounty, if the production of a commodity is not accompanied by the payment to the workers employed in that production of a fair and reasonable rate of wage. The amounts paid in bounties during 1909-10 were :—

COMMONWEALTH BOUNTIES PAID (EXCLUDING SUGAR), 1909-10.

Cotton.	Flax and Hemp.	Sisal Hemp.	Preserved Fish.	Tobacco Leaf.	Cotton Seed for Manufacture of Oil.	Coffee, Raw.	Fruits, Dried.	Combed Wool or Tops Exported.	Iron Manufactures etc.*	Wire Netting.*	Total.
£	£	£	£	£	£	£	£	£	£	£	£
34	120	25	311	276	10	117	104	4,933	26,542	6,036	38,508

* Paid under the Manufactures Encouragement Act, 1908.

The provision of bounties for sugar-growers is dealt with on page 398 *supra*. The present operative Act is the Sugar Bounty Act 1910, in the terms of which the grower receives bounty according to his production of sugar-cane grown by white labour. The bounties and expenses for the last six years were :—

SUGAR BOUNTIES EXPENSES, 1904-5 to 1909-10.

Year.	1904-5.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.
	£	£	£	£	£	£
Bounties ...	121,408	148,106	328,210	577,148	477,090	402,131
Expenses ...	6,770	6,603	7,706	7,474	6,616	5,648
Total ...	128,178	154,709	335,916	584,622	483,706	407,779

§ 4. Operation of the Wage-regulating Laws.

1. **System of Wages Boards.**—Wages Boards are appointed upon the application of either employers or employees. The grounds usually alleged by the former are that their business is hampered by "unfair" competitors, who pay only a sweating wage; by the latter, that they are sweated, or are entitled to an increase in their wages, by reason of the prosperity of the trade in which they are engaged.

2. **Wages Boards.**—The following table shews the position of trades in relation to the Boards. Some of the most recently appointed Boards have not yet made a determination.

WAGES BOARDS, 1910.

	Total Number of Distinct Trades carried on in Registered Factories.	Total Trades under Boards.	Total Factories Regist'r'd	Total Employees.	Total Employees under Wages Boards.	Percentage under Boards.	Number of Determinations.
Victoria	147	91	5,248	79,348	75,000†	77%	70
Queensland ...	77	30	1,995	24,123	No record	...	43
South Australia* ...	75	44‡	1,628	16,026	12,910	80%	23

* Applies to Metropolitan area only, and includes only persons employed in factories. † Including a considerable number working outside registered factories, such as shop employees in certain businesses, etc. ‡ Some 20 of the Wages Boards have only recently been authorised for appointment, and are now in course of formation.

In New South Wales there were in November, 1910, 117 Boards in existence. Awards of Boards and of the Industrial Court numbered 195, of which 54 were variations of previous awards, 20 were awards of Boards re-enacting awards of Court of Arbitration, 18 were awards of Industrial Court varying awards, and the remaining 103 were original awards of Boards. Before the end of the year, two additional awards of Boards were made.

The Court of Appeal in Victoria has heard seven appeals from determinations of Wages Boards. In one case the decision was upheld; in five cases decisions were reversed or amended; in one case the Board, unable to come to a determination, referred the matter to the Court, which exercised its power of fixing a proper wage where the average wage paid by employers did not afford a living wage. The Court also heard an appeal for a modification of its determination with respect to a trade, and decided to modify such determination by reducing the working hours and increasing the wages in certain cases.

3. **Effect of Acts.**—The question whether the operation of the Acts has bettered the monetary position of the operative may be answered in the affirmative. Starting from the lowest point, the provision of an absolute minimum wage per week has stopped one form of gross sweating. Another case is that of the "white-workers" and dressmakers; with these the lowest grade was the "outworkers," who were pieceworkers. In some branches of the Victorian trade, in 1897, the wages paid to outworkers for all classes of certain goods were only from one-third to one-half the wages paid in the factories for low-class production of the same line of stuff. By working very long hours the outworker could earn ten shillings per week. The average wage of females in the clothing trade in 1897 was ten shillings and tenpence per week; there were, however, in that year 4164 females receiving less than one pound per week, and their average was eight shillings and eightpence. It was almost a revolution when a minimum wage of sixteen shillings per week of forty-eight hours was fixed by the Board, when pieceworkers' rates were fixed to ensure a similar minimum, and when outworkers were placed on the level of pieceworkers. Many employers refused to continue to give outwork and took the workers into the factories on time work. The sanitary conditions

required were far more healthy than could exist in the poorer class of dwellings. The evidence of South Australian reports discloses similar facts in that State.

4. **Change of Rate of Wage.**—The following table shews the change of affairs in Victoria in these trades :—

VICTORIA—WAGES OF FEMALES IN CLOTHING TRADES, 1897 and 1908.

Year	Class.	Females Employed in the Dress, Mantle, and Underclothing Trade.		Females Employed in the Shirt Trade.	
		Number.	Average Wage.	Number.	Average Wage.
			£ s. d.		£ s. d.
1897	16 yrs. and over receiving under £1 per wk.	4,164	0 8 8	435	0 12 3
	" " £1 and over ...	593	1 9 1	144	1 3 10

	Females Employed in ...	Dress and Mantle Trade.		Shirt Trade.		Underclothing Trade.	
		Number.	Average Wage.	Number.	Average Wage.	Number.	Average Wage.
			s. d.		s. d.		s. d.
1908	Females at minimum wage and over ...	3,216	21 8	246	22 4	819	19 9
	Pieceworkers	96	16 9	782	18 10	190	18 8

The above trades, the sweating in which is world-wide, are taken as examples, and corresponding results may be obtained in any State, according as there is or is not a regulative law. In Tasmania, where no such law has been in operation, the scale of wages may be gathered from the fact that in clothing factories females of three and five years' service, and of twenty to twenty-six years of age, receive twelve shillings per week.

§ 5. Operation of the Arbitration Acts.

1. **New South Wales and Western Australia.**—In New South Wales eighty-six agreements were registered under the Industrial Arbitration Act 1901, and two under the Industrial Disputes Act 1908. These affected 1157 employers and nearly 38,000 employees. In Western Australia thirty-four agreements were registered up to the end of 1906; ten in 1907, six in 1908, and fifteen in 1909, making a total of sixty-five. The estimated number of employers affected was 619; of employees, 15,946. The courts have been kept extremely busy. In New South Wales, up to the end of 1908, 252 industrial disputes were filed, 130 awards were made, and the balance of the disputes were settled, withdrawn, or, for some other reason, removed from the list. Fifteen industrial agreements were made "common rules," but these are ineffective in consequence of a legal decision. Fifty-five awards have been made "common rules." There have also been 648 summonses for breaches of awards. In Western Australia 276 industrial cases were, up to the end of 1909, determined; and sixty-five industrial agreements were made and filed. The Industrial Disputes Act of New South Wales has proved far more speedy in its remedial effects than did the Arbitration Acts. During recent years the industrial relations in several important industries have been regulated by Industrial Agreements, thus avoiding the necessity of having recourse to the Court of Arbitration.

§ 6. Other Commonwealth Legislation affecting Labour.

1. **Constitutional Power.**—By sec. 51 of the Commonwealth of Australia Constitution Act power is conferred upon the Parliament of the Commonwealth to make laws respecting, *inter alia*—

(xix.) Naturalisation and aliens.
(xxiii.) Invalid and old-age pensions.
(xxvii.) Immigration and emigration.
(xxxv.) Conciliation and arbitration for the prevention and settlement of industrial disputes extending beyond the limits of any one State.

2. **Legislation.**—(i.) *Old-age Pensions Act.* A special appropriation was made by Parliament (Act No. 18 of 1908), whereby an Invalid and Old-age Pensions Fund was created; the payment of pensions was enacted by another statute (No. 17 of 1908) as from the 1st July, 1909, on which date the system of old-age pensions to persons of 65 years and upwards became established throughout the Commonwealth. The same Act provides for the payment of invalid pensions, on a date to be proclaimed; also for the age qualification for women being fixed at 60 by proclamation. In each case the proclamations were made in November, 1910.

(ii.) One of the first Acts of the Commonwealth was the *Pacific Island Labourers' Act 1901*, which prohibited the importation of further Kanaka labour for sugar plantations and provided for the deportation of those already in the Commonwealth.

(iii.) *The Immigration Restriction Acts 1901, 1905, and 1910* prohibit the immigration of any persons who are unable to comply with certain educational conditions. The effect of this Act is to exclude Asiatic and other coloured peoples from Australia.

(iv. *The Contract Immigrants Act 1905* defines a contract immigrant as an immigrant to Australia under a contract or agreement to perform manual labour in Australia. The contract must be in writing and must be made by or on behalf of a resident in Australia. Its terms must be approved by the Minister of External Affairs before the admission of the immigrant. It must not be made in contemplation of, or with a view of affecting an industrial dispute. The Minister must be satisfied that there exists a difficulty of obtaining a worker of equal skill and ability in the Commonwealth, but this last provision does not apply to contract immigrants who are British subjects either born in the United Kingdom or descended from persons there born. The terms of the contract must offer to the immigrant advantages equal to those of local workers. Domestic servants and personal attendants accompanying their employers to Australia are excluded from the operation of the Act. Contract immigrants not complying with the above conditions are excluded from Australia.

During the year 1907, 972 contract immigrants were admitted into the Commonwealth, of whom 731 were British, 107 were Spaniards, 80 Scandinavians, 41 Austrians, and 13 Germans. In 1908, 22 contract immigrants were admitted, of whom 20 were British and 2 German. The Britishers followed various occupations; the two Germans were piano makers. In 1909, 158 contract immigrants were admitted, of whom 152 were British. Their occupations were—47 agricultural labourers, 36 bottle makers, 37 station hands, and 32 various. No contracts were disapproved, and no contract immigrants were refused admission during 1907, 1908, or 1909.

(v.) *The Sugar Bounty Act 1910* and the *Bounties Act 1907* make the payment of the bounty contingent on the goods having been grown or produced by white labour.

(vi.) Part VII. of the *Trade Marks Act 1905*, providing for the registration of marks by any individual Australian worker or association of Australian workers for the purpose of indicating that the articles to which it is applied are the exclusive production of the worker or of members of the association—an adaptation of the American "union label"—has been held by the High Court to be constitutionally *ultra vires*. The Court made an order forbidding the Registrar to keep a workers' register.

SECTION XXVIII.

DEFENCE.

§ 1. Military Defence.

1. **Historical Outline.**—Prior to 1870, the main defence of Australia was entrusted to small garrisons of British troops quartered in the leading cities. The primary purpose of these bodies of troops was to serve as a convict guard. From time to time, rumours of wars and of attacks upon Australia deemed imminent as a result of European entanglements, caused the raising of local companies and batteries, which were generally disbanded upon the cessation of hostilities or the quietening of the rumours. The first of such bodies was the "Loyal Association" formed in 1801 as a volunteer corps, on account of the Napoleonic wars, and at the express invitation of the Governor. Half a century later, and at other later dates, fear of Russian aggression drove the colonists to measures of self defence. Efforts to permanently establish a defence force, however, failed until 1870. In that year, the withdrawal of the last Imperial regiment from Australia, and the sense of insecurity which the Continental wars had engendered, resulted in a definite basis for colonial defence being settled. Small detachments of permanent soldiery were established to act generally as a nucleus about which the citizen soldiery should be shaped, and, generally, to look after the forts and defence works, which had then begun to be erected. The system rested upon a volunteer basis, training and service being freely and enthusiastically given by the citizens, the Governments supplying arms and accoutrements and sometimes uniforms. Reward for five years' service frequently took the shape of grants of land. About 1880, Imperial experts advised the substitution of the purely volunteer system by a "militia" or partially-paid system. The provision of a small annual allowance, generally £10 or £12 per annum for the gunner or private, with a sliding scale for higher ranks, together with arms, accoutrements, ammunition, and all military necessaries free, enabled the "militia" system to be introduced about 1883-4. The expenditure was thereby increased, but it was held that the efficiency was enormously greater. With reductions in the rates of pay the system has remained to the present day. "Volunteer" corps have again been raised, and the "permanent" forces from time to time augmented. A detailed historical account of the Australian defence forces will be found in the Commonwealth Year Book, No. 2, pp. 1075-1080.

The establishment and strength of the military forces of the several States on 31st December, 1900, immediately prior to federation, was as follows, cadets, reservists, and rifle club members being excluded :—

ESTABLISHMENT AND STRENGTH OF MILITARY FORCES OF STATES,

31ST DECEMBER, 1900.

State.	Establishment.		Strength.	
	Officers.	Other Ranks.	Officers.	Other Ranks.
New South Wales	549	9,295	505	8,833
Victoria	394	6,050	301	6,034
Queensland	310	5,035	291	3,737
South Australia	141	2,847	135	2,797
Western Australia	140	2,553	135	2,561
Tasmania	131	2,605	113	1,911
Commonwealth ...	1,665	28,385	1,480	25,873

The strength of the various arms is shewn in the following table, permanent being distinguished from "militia," or partially-paid, and "volunteers" :—

STRENGTH OF THE VARIOUS ARMS, 31st DECEMBER, 1900.

Arms.	N.S.W.		Victoria.		Q'land.		S. Aust.		W. Aust.		Tas.		TOTAL.	
	Officers.	Other Ranks.	Officers.	Other Ranks.	Officers.	Other Ranks.	Officers.	Other Ranks.	Officers.	Other Ranks.	Officers.	Other Ranks.	Officers.	Other Ranks.
Permanent—														
Staff	19	98	14	58	15	57	14	5	2	8	3	9	67	235
Field and Garrison Artillery... ...	18	429	12	272	7	214	1	23	2	31	—	15	40	984
Engineers and other units	5	70	1	32	—	—	—	—	2	2	—	—	8	104
Militia and Volunteer—														
Cavalry and Mounted Rifles	88	1,695	52	1,033	53	741	33	621	32	799	5	91	263	4,980
Field Artillery ...	10	121	14	277	13	138	4	101	12	174	—	—	53	811
Garrison Artillery...	27	441	37	901	17	212	9	165	2	66	13	197	105	1,982
Infantry	242	5,382	136	3,193	145	2,189	58	1,786	71	1,451	83	1,549	735	15,550
Engineers and other units	96	597	35	268	41	186	16	96	12	30	9	50	209	1,227
	505	8,833	301	6,034	291	3,737	135	2,797	135	2,561	113	1,911	1,480	25,873

2. **Land Defence of Federated Australia.**—(i.) *Assumption of Control by Commonwealth.* The Commonwealth of Australia Constitution Act of 1900 empowered the Commonwealth to legislate with respect to "the naval and military defence of the "Commonwealth and of the Several States, and the control of the forces to execute and "maintain the laws of the Commonwealth," and vested the command-in-chief of the Commonwealth forces in the Governor-General, authorising him to proclaim a date, after the establishment of the Commonwealth, for the transference of the Defence Department from each State. This transfer was effected in March, 1901, when the Ministry for Defence, one of the seven departments of the Executive Council of the federation, took over the control of the whole of the forces of the States.

(ii.) *The System of Administration.* Up to 12th January, 1905, the administration of the Commonwealth military forces was by means of a general officer commanding and a headquarters staff. On the date named, a Council of Defence, to deal with questions of policy, and a Military Board, to supervise the administration of the forces, were constituted. The main objects aimed at were (*a*) to establish continuity in defence policy; (*b*) to maintain a continuous connection between parliamentary responsibility and the control and development of the defence forces, the Minister being in constant and effective touch with his department; (*c*) to establish continuity of administrative methods by the creation of a continuous board; (*d*) the separation of administration from executive command, so as to develop the independence of district commands, and by giving scope to independent thought and initiative, make practicable a larger measure of decentralisation, and, more particularly, to make possible the ultimate development of a citizen force; (*e*) to maintain, on a uniform basis, the efficiency of the forces, by continuous and searching inspection by, and independent report from, an officer who, as Inspector-General, is appointed to report upon the results of the administration of the forces, the efficiency of the troops, the system of training, the equipment, the preparedness for war, and the state and condition of all defence works.

The military system of the Commonwealth is made up of—

(*a*) Permanent Forces which include

Administrative and Instructional Staff.
The Royal Australian Artillery Regiment (garrison).
The Australian Field Artillery (permanent).
Small detachments of—
Royal Australian Engineers.
Australian Army Medical Corps.
Australian Army Service Corps.

(*b*) Citizen Forces, comprising

Militia Forces of all arms.
Reserve Forces.

The Royal Australian Artillery Regiment (garrison) practically provides the garrison for certain naval strategic positions and other defended ports, and maintains the forts, guns, stores, and equipment in connection therewith. The other permanent detachments are to form a nucleus, each in its own arm, for instruction and administration of the citizen forces.

The forces of the Commonwealth are organised into—

(*a*) Field Force.
(*b*) Garrison Troops.

The field force consists of five Light Horse brigades, two infantry brigades, and four mixed brigades, and its duties are to undertake the defence of the Commonwealth as a whole, and to act as reserve to the garrison troops. The garrison troops find the necessary garrisons for the defended ports.

The reserves consist of (*a*) officers who, having passed through a certain period or course of training, have retired from active service, and (*b*) members of rifle clubs, attested under the Defence Acts. Rifle club members are required each year to fire a prescribed musketry course, a capitation allowance being paid to clubs for each member classed as efficient. Rifle clubs would furnish a means of bringing the active forces up to war strength in time of national emergency.

(iii.) *Strength of Military Forces under the Federation.* The position of the military forces under the Commonwealth is shewn in the following table :—

STRENGTH OF MILITARY FORCES, 1901 to 1910.

State.	1901. *1/3/01.	1905. 30/6/05.	1906. 30/6/06.	1907. 30/6/07.	1908. 30/6/08.	1909. 30/6/09.	1910. 30/6/10.
Headquarters	...	23	21	21	26	30	37
New South Wales	9,772	7,450	7,641	7,501	7,665	7,902	7,899
Victoria	7,011	5,858	6,146	6,235	6,568	6,669	6,876
Queensland	4,310	2,877	3,011	2,979	3,176	3,224	3,202
South Australia	2,956	1,842	1,962	1,888	1,935	2,004	2,019
Western Australia	2,283	1,235	1,522	1,625	1,611	1,662	1,608
Tasmania	2,554	1,214	1,645	1,662	1,650	1,870	1,868
Total	28,886	20,499	21,948	21,911	22,631	23,361	23,509

* Date of Commonwealth taking over the military forces from States.

(iv.) *Strength of the Various Arms.* The numbers of the different arms of the service on the 30th June, 1910, were as follows:—

ARMS OF THE COMMONWEALTH DEFENCE, 1910.

Militia Staff ...	53	Army Service Corps	305	Administrative and	
Light Horse ...	5,317	Army Medical Corps	729	Instructional Staff	388
Field Artillery ...	1,378	Automobile Corps...	32	Pay Department,	
Garrison Artillery ...	2,168	Army Nurs'g Service	100	Rifle Ranges, Rifle	
Engineers	901	Army Vetrny. Corps	17	Clubs, Officers, etc.	66
Infantry	11,571	Ordnance Departm't			
Intelligence Corps	63	(including Arma-			
Corps of Signallers	266	ment Artificers) ...	155	Grand Total ...	23,509

(v.) *Classification of Land Forces.* The following table shews the classification and strength of the land forces in each State, including rifle clubs and cadets, on the 30th June, 1910:—

CLASSIFICATION OF LAND FORCES, 1910.

Branch of Service.	Central Adm'st'n.	New South Wales.	Victoria.	Q'land.	South Aust.	West'n Aust.	Tas.	Total.
Permanently employed ...	32	551	435	272	74	97	61	1,522
Militia	5	5,402	5,207	2,826	1,428	924	1,138	16,930
Volunteers	—	1,946	1,234	104	517	587	669	5,057
Rifle Clubs	—	15,300	21,471	7,953	5,380	5,899	1,879	57,882
Cadets	—	10,727	11,055	5,271	3,083	3,053	1,637	34,826
Unattached List of Officers	—	56	103	51	28	28	39	305
Reserve of Officers ...	—	142	160	116	50	27	10	505
Chaplains	—	36	39	21	11	18	12	137
Grand total ...	37	34,160	39,704	16,614	10,571	10,633	5,445	117,164

§ 2. Naval Defence.

1. **Historical Outline.**—Prior to 1890, when arrangements were made with the British Government for the maintenance of an Australian squadron, provisions for naval defence had been instituted in New South Wales, Victoria, Queensland, and South Australia, where gunboats, torpedo boats, or small cruisers were commissioned, and naval volunteers raised. A fuller historical account of the Australian naval forces under the States is given in the Commonwealth Year Book, No. 2, pp. 1084, 1085.

2. **The Naval Agreement with the British Government.**—(i.) *The Original Compact.* The naval defence of Australasia and its trade is entrusted primarily to ships of the Imperial Navy, maintained under an agreement entered into between the British Government and the Governments of the Commonwealth and New Zealand, and at their joint charge. This agreement was embodied in Acts passed by the several Legislatures some ten years prior to Australian federation. According to its terms, a naval force, additional to the vessels of the Australian Naval Station, which were to be maintained at their normal strength, was to act as an auxiliary squadron. It consisted of five fast third-class cruisers and two torpedo gunboats, and its special function was the protection of the floating trade in Australasian waters. The agreement was made for ten years, and was then, or at the end of any subsequent year, to be terminable only upon two years' notice being given. On its termination, the vessels were to remain the property of the Imperial Government. Three cruisers and one gunboat were to be kept continuously in commission, and the remainder in reserve in Australasian ports, but ready for commission whenever occasion might arise. The vessels were to remain within the limits of the Australasian station, and were to be employed, in times of peace or war, within such limits, in the same way as the Sovereign's ships of war, or employed beyond those limits only with the consent of the Colonial Governments.[1] The first cost of the vessels was paid out of Imperial funds, but the Colonial Governments paid interest on the prime cost at 5 per cent. (up to a maximum of £35,000 per annum), and a sum not exceeding £91,000 for annual maintenance of the vessels, or a total annual contribution of £126,000. In times of emergency or actual war, the cost of commissioning and maintaining the three vessels kept in reserve during peace, was to be borne by the Imperial Government, and, in every respect, the vessels were on the same status as the ships of war of the Sovereign, whether in commission or not. The officers and men of those in commission were subject to a triennial change. The tenth annual contribution, which was payable in advance on 1st March, 1900, apportioned on a population basis, was as follows:—New South Wales, £37,973; Victoria, £32,749; New Zealand, £21,304; Queensland, £13,585; South Australia, £10,439; Western Australia, £4816; Tasmania, £4776.

(ii.) *The Agreement of 1903.* The agreement was not dissolved by the union of six of the contracting colonies, but its renewal, with some alterations, was embodied in the Naval Agreement Act of 1903, the Parliament of New Zealand also assenting. It provided that the force should be made up of one first-class armoured cruiser, two second-class cruisers, four third-class cruisers, four sloops, and a Royal Naval Reserve of 25 officers and 700 seamen and stokers. One of the ships was to be kept in reserve, three to be partly manned for drill purposes for training the Royal Naval Reserve, and the remainder to be kept in commission and fully manned. Australians were, as far as possible, to man the three drill ships and one other vessel, but the vessels were to

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1. The boundaries of the Australasian station were thus defined:—North—On the north from the meridian of 95° east, by the parallel of the 10th degree of south latitude to 130° east longitude; thence northward on that meridian to the parallel of 2° north latitude; and thence on that parallel to the meridian of 136° east longitude; thence north to 12° north latitude and along that parallel to 160° west longitude. West—On the west by the meridian of 95° east longitude South—On the south by the Antarctic circle. East—On the east by the meridian of 160° of west longitude.

Nothing in the agreement was to affect the purely local naval forces which had been, or might be, established in the colonies for harbour and coast defence. Such local forces were to continue to be paid for entirely by the colony, and to be solely under its control.

be officered by Royal Navy and R.N. Reserve officers. Eight nominations for cadet-ships were to be given annually in the Commonwealth and two in New Zealand. One half of the annual cost of maintenance was to be borne by the colonies—five-sixths of the half (but not exceeding £200,000) by Australia, and one-sixth (but not exceeding £40,000) by New Zealand. The agreement, like the earlier one, was for ten years. By a subsequent arrangement the strength of the squadron was established at one first-class armoured cruiser, three second-class cruisers, and five third-class cruisers. Three sloops were recalled as having no war value, but usually one has been attached to the station as a survey vessel.

3. **The Naval Defence of Federated Australia.**—(i.) *Assumption of Control by Commonwealth.* One of the reasons most frequently urged in favour of a federated Australia was the need for adequate defence. Accordingly, since the consummation of federation, the Commonwealth has assumed control of every branch of defence. Land defences have been unified and systematised, and it has been said that Australia is now ready to take full responsibility for the defence of her ports and dockyards, and for safeguarding her coastal trade. It may be mentioned that the floating trade of the Commonwealth amounts to £160,000,000 per annum, and its adequate protection involves corresponding naval provision with such naval war material as will permit the principal lines of sea communication being kept open; or, if not, ensuring that Australian ports are fully defended.

The Commonwealth Government has therefore started the building of an Australian navy, and in March, 1909, contracted with Messrs. Denny Brothers and the Fairfield Shipbuilding and Engineering Co. Ltd. for the construction of two torpedo boat destroyers, to cost £81,500 each; one vessel to be delivered in fourteen months, the other in fifteen months from the date of signing the contract. A third vessel of the same kind, to be ready for shipment in twelve months, was also to be delivered in Australia in sections, at a cost of £72,500, for local completion.

In connection with the construction of these vessels, eight selected Australian workmen were sent to be trained in the yards of the successful tenderers.

(ii.) *The Naval Forces under the Federation.* Prior to 1905 a naval officer commanding administered the naval forces. On 12th January of that year the Council of Defence was established to deal with all questions of policy, and the Naval Board, then first constituted, took over the administration of the Commonwealth naval forces. Continuity of policy and administration are thereby believed to be ensured, whilst efficiency and uniformity are provided for in the scheme of inspection and report by an officer who, as Director of Naval Forces, is appointed to deal with the training of the *personnel*, and the condition of the *materiel*, of naval forces and works.

The following table shews the strength of Commonwealth naval forces on 30th June, 1910:—

STRENGTH OF COMMONWEALTH NAVAL FORCES, 1910.

Branch of Service.	N.S.W.	Victoria.	Q'land.	S. Aust.	W.A.	Tas.	Total.
Permanently Employed	6	119	64	50	1	...	240
Partially-paid ...	321	229	297	124	17	13	1001
Cadets	200	239	122	205	...	...	766
Total ...	527	587	483	379	18	13	2,007

(iii.) *Harbour Defences.* The vessels for harbour defence obtained by the several colonies prior to federation, and remaining at 30th June, 1910, were:—

COMMONWEALTH NAVAL FORCES, HARBOUR DEFENCE VESSELS, 1910.

Description.	Name.	State.
Iron armour-plated turret ship ...	*Cerberus*	Victoria
Steel cruiser	*Protector*	South Australia
Steel gun vessel	*Gayundah*	Queensland
" "	*Paluma*	Victoria
First-class torpedo boat	*Countess of Hopetoun* ...	"
" "	*Childers*	"
Second-class torpedo boat	*Nepean*	"
" "	*Lonsdale*	"
" "	*Mosquito*	Queensland
" "	... ...	South Australia
Torpedo launch	*Gordon*	Victoria
"	*Midge*	Queensland

The *Gayundah* and *Protector* are utilised for the sea-training of the Naval Militia.

§ 3. The Training of Officers, etc.

1. **Instruction and Exchange.**—The former practice of obtaining officers and non-commissioned officers of the Imperial Army to act as instructors for the Australian military forces has been discontinued for some considerable time; but in August, 1905, arrangements were made for the mutual exchange of permanent officers between the Commonwealth and England, India, and Canada, three officers having been exchanged each year since 1906. At the same time the practice which has existed for some years of sending officers and non-commissioned officers to England for instruction has been continued, and this year two officers and four non-commissioned officers of the permanent forces will be sent. In addition, four officers of the militia forces were sent to India for instruction in 1908, four in 1909, and five in 1910.

§ 4. The Cadet System.

1. **School Cadets.**—Many years before the consummation of Australian federation the systematic military training of lads had been instituted in the schools of the colonies, and the cadet system had attained considerable development. The Commonwealth Government has made arrangements with the various Departments of Education so that boys attending school shall be afforded facilities for drill by their teachers, and regular instruction by the Cadet Instructional Staff of the military forces. The strength of the cadets has increased rapidly, and under the recently-introduced system great expansion is expected. The strength on the 30th June, 1910, was as shewn on the following page.

2. **Senior Cadets.**—Senior cadet battalions, for boys having left school, form a connecting link between the schoolboy soldiers and the citizen forces, the strength on the 30th June, 1910, being as shewn on the following page.

3. **Mounted Cadets.**—Mounted cadet corps have also been formed in various parts of the Commonwealth, the members supplying their own uniforms, mounts, and horse-gear, and being trained in troop and squadron drill by instructors appointed for that purpose. Their organisation is distinct from the educational establishments, but they

are under similar conditions as regards drill and discipline. It is hoped that this corps will form a useful recruiting ground for the mounted branches of the service.

The strength of the Commonwealth cadets, school, senior, and mounted, was on 30th June, 1910, as follows:—

STRENGTH OF COMMONWEALTH CADETS, 1910.

—	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	Total.
Cadet staffs... ...	3	4	2	3	2	1	15
Senior cadets ...	3,687	3,662	1,251	725	601	329	10,255
Mounted cadets ...	54	114	69	...	69	29	335
Cadets	6,983	7,275	3,949	2,355	2,381	1,278	24,221
Total ...	10,727	11,055	5,271	3,083	3,053	1,637	34,826

4. **Naval Cadets.**—Naval cadets have also been organised under the Defence Act. Generally the instruction, given by instructors of the naval forces, aims at embracing all branches of a seaman's training. The strength at 30th June, 1910, was 766.

5. **Boys' Brigades.**—In addition, boys' naval brigades and boys' (military) infantry corps have been instituted in connection with various societies. These have not come under direct Governmental control, and it is not intended that they should do so. But, while remaining unofficial, they are given a grant of 7s. 6d. a head for efficients, between twelve and sixteen years of age, who are properly uniformed, and receive instruction in physical drill, squad and company drill, knotting and splicing, and semaphore signalling. The idea of the originators of the movement is to keep the lads together in their leisure time, turning it to profitable account, and inculcating the principles of self-restraint and discipline, while at the same time preparing them for the sterner duties of citizenship.

6. **Scouts.**—Similar in intention is the "Boy-scout" movement. This organisation, instituted in England, extended to Australia in 1907, and has since spread rapidly, centres having been formed in the leading towns and in many country districts. Healthy and interesting instruction is given to the boys, and matters are taught that assist them in their private life, and are at the same time useful as war training. Principal among these are:—First aid to the injured, cultivating powers of observation and tracking, visual signalling, knotting and splicing, hut and bridge building, compass reading and map drawing, hygiene. Out-door life is encouraged, and bivouacs and camps are frequently held. Patriotism and comradeship are inculcated, and the use of intoxicants and narcotics prohibited. The movement is practically self-supporting. The "Girl-aid" movement has also been inaugurated, with the intention of giving girls training in discipline and the duties of camp life. These include first aid and nursing, simple camp cooking, signalling and telephoning, and hygiene.

§ 5. Commonwealth Defence Legislation.

1. **The Defence Acts of 1903 and 1904.**—(i.) *General Provisions of the Acts.* The defence of Australia at the present time is enacted and prescribed by the Defence Acts 1903-10 of the Federal Parliament. Many of the provisions of the Acts of 1903 and 1904 are merely enabling, empowering the Governor-General to arrange for the efficient defence of the Commonwealth, and to appoint officers to responsible positions and to commissioned ranks generally. The defence force is declared to consist of the naval and military forces of the Commonwealth, divided into "permanent" and "citizen" forces. The former consists of persons bound to continuous service for a term; the latter consists of persons not so bound. Prior to 1911, they were divided into "militia," who were paid, and "volunteers," who were not ordinarily paid, for their services. Members of rifle clubs

duly sworn, and enrolled persons who have done active service, make up the reserve forces. In time of peace, enlistment is voluntary. In time of war, the citizen forces may be called out the by Governor-General, who must state his reason for so doing, and communicate the fact to Parliament. Members of the naval forces may be called upon to serve outside the Commonwealth, but those of the military forces are not liable for such service. The forces may be used for the protection of the States from domestic violence. Command in time of war may be given to the Commander of any portion of the King's regular forces, or of the King's naval forces. For training, and in war, the naval forces may be placed on board ships of the navy of the Australian station. The Army Act (Imperial) is to apply to the Commonwealth military forces, and the Naval Discipline Act (Imperial) to the Commonwealth naval forces, while on active service, except where those Acts are inconsistent with the Commonwealth Defence Acts. Regulations, however, may prescribe that any provisions of the Imperial Acts named shall not apply. Provision is to be made out of the Consolidated Revenue Fund for families of men killed or incapacitated while on service.

Male inhabitants between 18 and 60 years of age are liable to serve in time of war, Parliament being informed of the occasion if in session, and being summoned within ten days if not. Under the Acts of 1903 and 1904 persons the doctrines of whose religion forbade them to bear arms or perform military service might be exempted.

Naval and military cadet corps are also established—to consist of schoolboys over 12 years of age, and youths between 14 and 19 not attending school. They are not liable for active service.

The construction and maintenance of vessels, building and equipment of forts, laying of mines, institution of arms and ammunition factories, the acquisition of artillery and rifle ranges, and the performance of all acts for efficient defence and protection, are provided for. Railways and tramways are to carry troops when required. In time of war, the control of these services may be assumed by an officer duly authorised, and vehicles and boats may be impressed, and troops billeted and quartered. Heavy penalties are decreed for unlawfully giving information as to defences, or unlawfully obtaining same; and for supplying inferior provisions, material, equipment, etc. Information required under the Act is to be correctly given. Persons required to enlist are to do so, and are to take the oath of affirmation prescribed, and no person is to procure or aid desertion or to harbour deserters. Obstructing drill, personating, sketching fortifications and works or trespassing in them, or even being, with the intention of graphic representation, in their vicinity with drawing or photographing materials, etc., is forbidden.

An exhaustive body of regulations has been drawn up under the authority of the Act, and the details of service and duties of members of the forces are set out therein. These, having been notified in the Government *Gazette*, have the force of law.

The Governor-General, under the powers conferred upon him by the Acts, has appointed an Inspector-General of the Military Forces, a Director of the Naval Forces, District Commandants, and commissioned officers generally. In the first appointment of officers, preference is accorded to persons who have served in the ranks. Promotions of officers are generally subject to passing the prescribed examinations, but distinguished service, or marked ability and gallantry in active service, may be permitted to gain promotion without examination. A Council of Defence, and Boards of Military and Naval Administration have been constituted. A Reserve of Officers has been formed, and also an Unattached List, whence officers may be employed for duty with any corps or with the staff. The authority of the Act to establish a Naval and Military College has not yet been availed of, but a Chair of Military Science has been endowed by the University of Sydney, and an officer of the Imperial general staff has been appointed Director of Military Science. Reference is made hereinafter to the course of instruction. It is hoped that now not only soldiers will be enabled to perfect themselves in the duties of their profession, but that the influence of the teaching will pervade all classes of the

community, and enable them to speak and vote more effectively, because with greater knowledge, when defence matters come up for consideration.

(ii.) *Regulations for Efficiency.* Under the regulations certain requirements for efficiency are set out for members of the militia forces, inefficients being discharged. The principal of these requirements are :—Attendance at the annual camps of training; completion of a course of "field training" in the special duties of the arm to which the member is attached; attendance at District Commandants' inspections; and the performance during the year of an allotted amount of drill, generally 12 days or equivalent. In the case of specialist corps the efficiency requirements are greater. Camps, inspections, musketry, and field-training parades count for efficiency, and two half-days or four nights are regarded as equivalent to a day. The attendance of militia and volunteer forces at the camps held during the visit of Field Marshal Lord Kitchener, G.C.B., etc. at the beginning of 1910 is shewn in the accompanying tables:—

ATTENDANCE OF MILITIA AND VOLUNTEER FORCES AT CAMPS OF CONTINUOUS TRAINING, 1910.

Arm.	Total Strength at date of Camp.	Total Average Daily Attendance.	Percentage of Average Daily Attendance to Strength.
MILITIA—			
Command Staffs	32	27	84
Light Horse	5,118	4,029	79
Field Artillery	1,330	1,043	78
Garrison Artillery	1,384	946	68
Engineers	787	615	78
Infantry—Militia	6,473	4,775	74
Intelligence Corps	54	46	85
Corps of Signallers	268	228	85
Army Service Corps	297	244	82
Army Medical Corps	682	552	81
Army Veterinary Corps	13	12	92
Total Militia	16,438	12,517	76
VOLUNTEERS—			
Infantry	2,940	938	32
Automobile Corps	32	17	53
Total Volunteers	2,972	955	32
Grand total	19,410	13,472	69

The numbers classed as "efficient" for the year 1909-10 were as follows:—

EFFICIENTS (MILITIA AND VOLUNTEER FORCES) 30th JUNE, 1910.

Force.	Strength on 30th June, 1910.	Efficients.	Percentage of Efficients to Strength.	Non-Efficients.
Militia	16,474	13,437	82	3,037
Volunteers	4,885	3,386	69	1,499
Total	21,359	16,823	79	4,536

2. **The Defence Act of 1909.**—The principal provision of this Act is the addition of enactments relating to universal obligation in respect of naval and military training; the making of regulations exempting from service (persons with objections to service on religious grounds being exempt in any case); registration and enrolment for naval and military training; and establishment of a military college. Authority is provided for the establishment and maintenance of factories for the manufacture of naval and military equipment and uniforms; and for the employment of persons in a civil capacity for any purpose in connection with the Defence Force, or in any factory established under the Act. Owners of horses, vehicles, etc., which may be impressed for defence purposes, may be required to register them periodically, and any land may be entered under proper authority. Intoxicating and spirituous liquors are forbidden in camps and canteens. The provisions of the Act regarding periods of universal training are set out below (page 1089). Heavy penalties may be exacted from persons who evade service, and from employers who prevent employees from serving. Exemptions from training in time of peace are permitted to those medically unfit; to those not substantially of European origin or descent (except duties of a non-combatant nature); to school teachers qualified as naval or military instructors, or who are officers of cadets; to members of permanent forces. Specified areas may be exempted. Registration of all liable to serve is prescribed. A Military College under a director and staff is to be established, and instruction is to be given by its graduates to the citizen forces.

3. **The Defence Act of 1910.**—The Act of 1910 is an extension of that of the previous year. The exemptions from service are further defined, and comprise membership of Parliament; the holding office as judges, magistrates, constables, prison warders, and lighthouse keepers. Hospital doctors and nurses, non-Europeans, and persons with conscientious objections to bearing arms, are to be exempted from duties other than those of a non-combatant nature. Burden of proof of exemption rests on the person claiming it. Authority is given for the establishment and maintenance of horse depôts, farms and stations for the breeding of horses. Uniforms are to be free to all ranks of the citizen forces. The period of adult training is extended to seven years, in place of two years provided under the Act of 1909, and the duration of service with the adult reserves is consequentially shortened to one year instead of six. The organisation and duties of the Commandant and members of the military college are further defined. Though it is generally intended that entrance should be in youth, provision is made that any member of the forces over the age of nineteen years who passes the prescribed examination may be admitted to the college.

§ 6. The New Defence System.

1. **Defence Policy.**—(i.) *Peculiar Position of Australia.* The Acts of 1909 and 1910 were the direct outcome of the feeling, shared by all classes of the community, that Australia was insecure under the voluntary system. Recently, the Minister of Defence referred to the fact that if on a map of the world all the countries stained with blood were to be marked, Australia would be the only white spot. It is the national policy to effect a guarantee that this exemption from war should continue.

(ii.) *Continuity of Administration.* Under the recent Acts the system of administration by naval and military boards continues. The Governor-General is empowered to make appointments and promotions of naval and military officers; appoint an officer to command the whole or any portion of the naval forces; appoint military districts and sub-districts; raise, organise and maintain permanent and citizen naval and military forces, as may be deemed necessary for the defence and protection of the Commonwealth and of the several States.

(iii.) *Compulsory Training.* By the Defence Acts of 1903 and 1904 all male inhabitants of Australia between the ages of 18 and 60 years were made liable to serve in the defence forces *in time of war.* The recent Acts make training and service compulsory *in time of peace.* By the Act of 1909 the principle of universal liability to be trained was made law for the first time in any English-speaking community. The liability is upon all male inhabitants of Australia (except those specially exempted), who have resided in the Commonwealth for six months and are British subjects.

2. **The Military Scheme.**—(i.) *The Land Army.* The Act prescribed Junior cadet training for lads 12 and 13 years of age, followed by Senior cadet training for lads from 14 to 18 years of age, equivalent in duration to sixteen whole days annually (of which eight should be in camps of continuous training), the remainder being divided into convenient parades throughout the year. Thereafter adult training for two years in the citizen forces equal to sixteen days annually (eight in camp), followed by registration or one muster parade each year for six years. The existing citizen forces were to be continued. Arrangements for registration, enrolment, inspection, and medical examination of all persons liable to be trained were made, and it was enacted that a military college should be established.

(ii.) *Visit and Report of Viscount Kitchener.* Before the Act came into operation, viz., at the end of 1909, Field-Marshal Lord Kitchener visited Australia at the invitation of the Government, and after inspecting the military forces at work at camps held at various places throughout the Commonwealth, and the forts and defence works erected or in course of erection, reported upon the whole scheme of land defence. His recommendations (with the exception of some confidential matters) were made public in the form of a memorandum in February, 1910. A scheme was propounded in conformity with the Defence Acts 1903-9. But a somewhat new aspect was given to the Act of 1909, and the consolidation of its aims was suggested. The principal alteration was the addition of five years to the period of training, by making soldiers of 20 to 25 years of age continue their citizen soldier service by attending annually six days in camp; followed by only one year's muster parade, and thereafter passing to the reserve. The trend and purport of the published report are as follows:—

With adequate training and organisation the material in the young manhood of Australia is satisfactory. At present the numbers, training, and organisation are inadequate for defence purposes, all the circumstances being considered. Compulsory training for a period, with an unstated amount of voluntary service added, will, it is held, ensure readiness for emergencies, the number proposed under the Defence Act of 1909 being sufficient, provided that the forces are efficiently trained, organised, and equipped.

The provision of a military force adequate to ensure local safety and public confidence at a time of attempted invasion is regarded as a paramount duty, and the home defence forces of Australia, it is proposed, should be determined on lines similar to those adopted in Great Britain.

The estimated strength of the land forces necessary to do this—consideration being given to the great ocean distances which lie between Australia and the territory of any possible enemies, the armed strength and power of transportation oversea of any conceivably hostile nation, and the extent of territory of the Australian Commonwealth, contrasted with its comparatively small population—is estimated at 80,000, half to secure the larger cities and defended ports from attack, the other moiety to operate as a mobile striking force anywhere in Australia.

These forces should be enrolled, organised, and trained on the principle embodied in the Defence Act 1909, viz., the compulsory training of every citizen for national defence. The organisation proposed is—

21 brigades of 4 battalions each—84 battalions of infantry ;
28 regiments of light horse ;
49 four-gun field batteries ;
7 four-gun heavy and howitzer batteries, the whole totalling 224 guns ;
7 communication companies, and 14 field companies of engineers ;
with departmental troops in proportion.

Peace and war establishments of infantry, light horse, and artillery are—

Infantry battalion—Peace establishment	750	; war establishment	1030
Light horse regiment	,,	,,	350	,,	,,	499
Artillery battery	,,	,,	130	,,	,,	151

The peace establishment would be found from the 80,000 trained soldiers, and the augmentation to war establishment would be provided by the addition of the recruits and the 25-26 year men. For the latter, in peace time, a muster parade would suffice.

The annual periods of training, over and above home training, would be :—

For junior cadets, 12 to 14 years—120 hours.
For senior cadets, 14 to 18 years—equivalent to 16 days.
Recruit training, 18 to 19 years—16 days, 8 of them in camp.
Trained soldiers, 19 to 20 years—16 days, 8 in camp.
Trained soldiers, 20 to 25 years—6 days in camp.
Trained soldiers, 25 to 26 years—muster parade only.

Thereafter, the trained soldiers would pass to the reserve.

On this basis the yearly quotas enrolled in the citizen force would be :—

PROPOSED YEARLY QUOTAS IN THE CITIZEN ARMY.*

Ages.	Infantry.	Light Horse.	Artillery.	Total.	Engineers & Departm'ts
18-19 years (recruits)	12,500	1,950	1,450	15,900	1,175
19-20 years	11,800	1,850	1,370	15,020	1,125
20-21 years	11,200	1,750	1,320	14,270	1,075
21-22 years	10,700	1,650	1,240	13,590	1,025
22-23 years	10,200	1,600	1,190	12,990	975
23-24 years	9,800	1,500	1,130	12,430	925
24-25 years	9,300	1,450	1,050	11,800	875
Total, 19-25 (trained soldiers)	63,000	9,800	7,300	80,100	6,000
25-26 years (for muster parade)	9,200	1,400	1,000	11,600	850

* In this table an annual wastage of 5 per cent. is allowed for mortality, medical unfitness, absence, and other casualties.

The reasons for the extension of the periods prescribed in the recent Defence Acts are—(*a*) The cadet training is valuable as a preparation, but it cannot replace recruit

training. Therefore the 18-19 year men should be classed as recruits. (*b*) Soldiers to be efficient should be exercised in camp annually.

Division of the Commonwealth into 215 areas, varying in extent according to density of population, is proposed, each under command of a permanent instructional officer, assisted by one or two non-commissioned officers, and each providing a definite proportion of a fighting unit. The areas are to be combined to form one group, under the supervision of a superior instructional officer. These officers, together with those required for permanent troops, district staffs, and central administration, would form a staff corps ultimately to be drawn from the military college. They should be sent abroad for study, and also attached to other land forces of the British Empire. The citizen officers are to be specially trained in imparting instruction and in the leadership of men. Acceptance of a commission will entail a liability to serve as an officer for at least twelve years, but will not interfere with free movement from place to place in Australia, nor with the privilege of leave on private affairs to visit oversea countries. All promotions are to be from the ranks, and citizen officers are to be young men. To instruction in camps and classes should be added a correspondence system, and a military magazine, edited and published by the headquarters staff, should be circulated free. The citizen non-commissioned officers are to be specially chosen from those serving in the ranks, the most promising to receive special technical training, with pay and privileges superior to those of the soldier, since the N.C.O. will be carrying out more than the minimum legal requirement of service. The Australian citizen soldier experiences much of military value in the everyday conditions of his civil life. He is generally a good rider, active, lithe, and intelligent. With cadet training in shooting and the rudiments of drill, he would pass through the recruit stage, and during six years would serve annually the periods already set out, as an efficient and fully trained soldier, thereafter passing to the reserve.

Training of the citizen soldier would consist in "home" training under the staff corps in the vicinity of the men's homes; and camp training with neighbouring troops in concentration camps at some convenient place in the vicinity.

The retention of the position of Inspector-General is recommended, and his duties allotted.

The citizen force should, it is thought, be kept quite outside party politics, and a citizen officer elected to Parliament should be at once seconded.

The training of the new citizen troops would cost as follows:—

COST OF TRAINING UNDER SCHEME PROPOSED BY LORD KITCHENER.

Pay and horse allowance	£276,000
Rations during continuous training	38,000
Forage during continuous training	15,000
Transport of troops	78,000
Clothing, service pattern only	100,000
Horse hire and local transport	25,000
Miscellaneous	15,000
Total	£547,000

The annual total cost would be very close to that estimated for the fourth year of the scheme propounded under the 1909 Act, except that with increased training more gun and small arm ammunition would be required. An addition of £44,000 was therefore made to that estimate. A summary of the cost in the seventh year of the proposed scheme is given hereunder:—

SUMMARY OF ANNUAL COST IN SEVENTH YEAR OF SCHEME PROPOSED BY LORD KITCHENER.

Staff corps	£142,000
Permanent services	234,000
New Citizen Troops—	
Pay, allowances, and camp expenditure	547,000
New military college	15,000
Home instruction of the citizen officers	4,000
Compulsory Cadet Training—	
Jun. and sen. organisations, including all stores required	161,000
Reserves—	
Members of rifle clubs, etc.	126,000
Fixed defences, material only...	40,000
Mobile Armament—	
Field artillery and machine guns, with vehicles, harness, and all stores	60,000
Small arms	85,000
Ammunition—gun and small-arm...	136,000
General equipment	84,000
New works and buildings, rent, repairs, and maintenance	150,000
Miscellaneous	100,000
Total	£1,884,000

Railway construction, while developing the country, has resulted in lines of little use for defence owing to different gauges and lack of systematic interior connection. A war railway council is suggested, composed of the Chief Railway Commissioner in each State, under the presidency of the Quartermaster-General of the citizen forces, to secure co-operation with the military authorities in concentration and mobilisation.

Lord Kitchener's report also deals in detail with the mode of enrolment of the citizen forces, registration of all youths, record of changes of residence, and exemptions from service; pay of officers of the staff corps; pay of citizen officers and soldiers during service; entry and course of instruction at military college and its military and civil staff; the establishment and organisation of units; details of progressive training; plans for mobilisation; and allotment of functions of members of Military Board.

In the transition period, it is considered that a great deal of preparatory work might be done by the appointment of area officers from the existing militia and volunteer officers, and the existing permanent instructional staff. These should be assisted by the staff warrant and non-commissioned officers, supplemented by suitable appointees. Thus the completely-trained staff corps officer would find his area mapped out, the registration complete, and the various classes from junior cadets upwards formed. He would then take over a going concern, only requiring the guidance which he by reason of his thorough military grounding can give, to raise each quota of the national force to the high standard of efficiency demanded by the nation.

3. **Organisation of Land Forces under the Defence Act 1910.**—(i.) *Proclamation.* The Defence Act 1910, passed by the Parliament which was returned at the elections of April, 1910, came into operation on 1st January, 1911, by proclamation. On account either of sparseness of population or difficulty regarding communications (either of which reasons would entail expenditure incommensurate with military efficiency), certain areas are exempted. In all other parts of the Commonwealth territory the clauses decreeing universal training are proclaimed.

The proposed organisation is based upon necessary considerations of (*a*) the numbers available; (*b*) the length of service demanded; (*c*) the proportion of the various arms required. It differs in some of its details from the scheme propounded by Lord Kitchener and includes—

28 regiments of light horse;
56 batteries of field artillery;
93 battalions of infantry;

and a due proportion of engineers, communication, army service, and army medical corps, troops for forts, and other services.

In connection with the numbers available the figures of estimated male population are of interest. The total number at cadet age, *i.e.*, between 12 and 18, at 31st December, 1910, was about 292,000; at citizen soldier age, *i.e.*, between 18 and 26, 334,000; these latter, with 338,000 at ages between 26 and 35, give 672,000 as the total males at the best period for military service. In addition there are about 580,000 between 35 and 60.

The actual requirements under the scheme enumerated in sections 125, 126, and 127 of the Defence Act 1903-1910, are as follow:—

Section 125. All male inhabitants of Australia excepting those who are exempted by this Act) who have resided therein for six months shall be liable to be trained, as prescribed, as follows:—

(*a*) From 12 to 14 years of age, in the junior cadets;
(*b*) From 14 to 18 years of age, in the senior cadets;
(*c*) From 18 to 25 years of age, in the citizen forces; and
(*d*) From 25 to 26 years of age, in the citizen forces.

Provided that, except in time of imminent danger of war, service under paragraph (*d*) shall be limited to one registration or one muster parade.

Section 126. (*a*) The training in the junior cadets shall begin on the first day of July in the year in which the persons liable reach the age of 12 years, and shall continue for two years;

Provided that, in the case of persons who reach the age of 13 years in the year in which this part commences, the training shall begin on the first day of July in that year, and continue for one year.

(*b*) The training in the senior cadets shall begin on the first day of July in the year in which the persons liable reach the age of 14 years, and shall continue for four years;

Provided that, in the case of persons who reach the age of 15, 16, or 17 years in the year in which this part commences, the training shall begin on the first day of July in that year and continue for three years, two years, or one year respectively.

(*c*) The training in the citizen forces shall begin on the first day of July in the year in which the persons liable reach the age of 18 years, and shall continue for seven years.

Section 127. The prescribed training shall be, in each year ending the 30th June, of the following duration:—

(*a*) In the junior cadets 120 hours; and
(*b*) In the senior cadets four whole-day drills, twelve half-day drills, and twenty-four night drills; and
(*c*) In the citizen forces sixteen whole-day drills or their equivalent, of which not less than eight shall be in camps of continuous training.

Provided that in the case of those allotted to the naval forces and to the artillery and o the engineers in the military forces, the training shall be twenty-five whole-day drills, or their equivalent, of which not less than seventeen shall be in camps of continuous training.

Provided also that the duration of a whole-day drill shall not be less than six hours, of a half-day drill not less than three hours, and of a night drill not less than one hour and a half.

Provided also that in the senior cadets the number and duration of half-day and night drills may be varied by the substitution of other drills as prescribed of a total duration of not less than seventy-two hours.

The provisions for registration and inspection are contained in sections 142, 143, and 144 of the Act, and are as follow :—

Section 142. All male persons of Australia, who have resided therein for six months, shall register themselves or be registered by a parent, guardian, or other person acting *in loco parentis*, in the manner prescribed—

(*a*) During the month of January in the year in which they reach the age of 14 years (or, in the case of persons who in the year in which this part commences will reach the age of 15, 16, or 17 years, during the month of January in that year), or

(*b*) If not then present in Australia, or if for any other reason not registered at the prescribed time, within such further time and in such manner as is authorised by the regulations.

Section 143. (*a*) All persons liable to be trained under paragraphs (*c*) and (*d*) of section 125 of this Act and not exempted by this Act shall be allotted to the several arms and corps.

(*b*) Of all persons liable to be trained such a number as are required shall first be allotted for training in the naval forces.

(*c*) All persons liable to be trained under paragraphs (*b*), (*c*), and (*d*) of section 125 of this Act who are forbidden by the doctrines of their religion to bear arms, shall, so far as possible, be allotted to non-combatant duties.

Section 144. All persons liable to be trained shall attend at the prescribed times and places for inspection, and shall give such information as is prescribed, and shall submit to the prescribed medical examination.

The first work in the active carrying out of the scheme commenced with the training of 200 non-commissioned officers for the instruction of the projected army in a six months' camp. Area officers were chosen from the citizen forces, and underwent a six weeks' course of instruction. With the year 1911 came the active enrolment of the new cadets; the total registrations in training areas up to 31st January exceeded 120,000.

The progress of this work will be in stages, as follows:—

First stage, January to June, 1911.—Existing junior and senior cadets to continue to 30th June, 1911, but all equipment to be returned by that date; registration, inspection, and medical examination to proceed of lads whose 14th, 15th, 16th, and 17th birthdays occur in 1911; preparations to be made to clothe and equip the new senior cadets.

Second stage, July, 1911, to June, 1912.—Registration, etc., of lads whose 14th birthday occurs in 1912; new junior and senior cadet training begins from 1st July, 1911. Of the latter, about 20,000 will pass as recruits, inaugurating the new citizen forces in the third stage.

Third stage, July, 1912, to June, 1919.—Registration, etc., of lads whose 14th birthday occurs in 1913; new citizen forces training begins with 20,000 recruits (18 year old persons drafted from the new senior cadets). During the third, fourth, and subsequent stages the new senior cadet force, numbering 100,000, will continue. During this period the units under the new organisation will be created.

Fourth and subsequent stages, after July, 1913, (and each year).—Registration, etc., of lads whose 14th birthday occurs in 1914, and so on. In the fourth and subsequent stages, the new citizen forces will also be continued, increasing each year by 20,000.

The territorial organisation of the Commonwealth is one of areas based upon infantry units. There are 93 battalion areas, approximately equal in number of males of citizen soldier age, and each containing a battalion of infantry, with either a battery of field artillery (in urban districts), or a regiment of light horse (in country districts), and also a larger or smaller number of one or more other arms, departmental corps, etc. For internal administrative purposes, the battalion areas are subdivided into two or three training areas. Brigade areas are formed by grouping four battalion areas.

The instructors provided for training existing units and for territorial work in connection with the new system consist of 58 officers and 425 warrant and non-commissioned officers of the instructional staff (permanent), and 224 area officers (temporary). They are required to supervise the training of light horse, infantry, and senior cadet units, and to instruct in the non-technical duties of specialist corps. Additional officers and non-commissioned officers in the permanent troops will instruct in technical work.

The officers of the instructional staff will act as Brigade-Majors, and as such will represent the Commandant in the brigade area. They will be responsible for the instruction of officers of the existing citizen forces, will conduct local schools of instruction, supervise and instruct the area officers, and allot the non-commissioned officers of their detail to various duties. Assistant Brigade-Majors will also be furnished from the instructional staff. The duties of area officers will vary both in nature and extent, and will comprise registration and organisation of those to be compulsorily trained; the clothing, arming, equipping, and training of the new senior cadets; and the training of recruits in the citizen forces. They will also relieve citizens officers of administrative work, and perform the duties of adjutant to militia units.

The staff instructors (warrant and non-commissioned officers) will carry out the administrative work of their areas or units, and instruct cadets and recruits in light horse and infantry drill and tactics.

The area officers do not undertake the registering and inspection of junior cadets. There is no provision in the Act for registration before the 14th year; but when the junior cadet presents himself for registration before the area officer, it will be necessary for him to show that he has complied with the requirements of the Act during the five preceding years. It is probable that State Inspectors of Schools and special inspectors of physical training (to be approved, and appointed by the Minister of Defence), will undertake the supervision of the great body of the junior cadets, the training being in the hands of school teachers, who shall have been specially instructed for the purpose. The area officer and staff instructors will visit schools where the training is not carried out by the schoolmasters.

(ii.) *Record for Anthropometric Purposes.* In connection with the medical inspection, it has been arranged that the colour and character of hair, and the colour of eyes, of those examined shall be recorded for statistical purposes. Instructions have been compiled by the Commonwealth Statistician, in accordance with which the area officers will classify the hair-colour under four divisions, comprising three types of fair, two of reddish, three of brown, and two of black. The character of the hair is recorded also in four divisions, viz.: (*a*) perfectly straight and smooth; (*b*) wavy and curly; (*c*) frizzy; (*d*) woolly. Intermediate types are to be classed under the heading to which they approach most nearly. The eye-colour will be classified under four divisions, comprising sixteen types, viz., four of greyish, four of bluish, four of yellowish, and four of brown and hazel.

It is possible that later the recommendations of the British Anthropometric Committee will be adopted.

The object of the investigation is to study the development of the Australian nation, the necessary statistic for military identification purposes affording a unique opportunity. A possibility exists of co-ordinating anthropometric work in the schools with that done in connection with compulsory military service.

(iii.) *Exemptions and Disabilities for Service.* Exemptions from service are set out in sections 61, 61a, 138, 140, and 140a of the Act, as given below:—

Section 61. The following shall be exempt from service in time of war, so long as the employment, condition, or statute on which the exemption is based continues:—

(*a*) Persons reported by the prescribed medical authorities as unfit for any naval or military service whatever; and

(*b*) Members and officers of the Parliament of the Commonwealth or of a State; and

(*c*) Judges of Federal or State Courts, and police, stipendiary, or special magistrates of the Commonwealth or of a State; and

(*d*) Ministers of religion; and

(*e*) Persons employed in the police or prison services of the Commonwealth or of a State; and

(*f*) Persons employed in lighthouses; and

(*g*) Persons employed as medical practitioners or nurses in public hospitals; and

(*h*) Persons who are not substantially of European origin and descent, of which the medical authorities appointed under the regulations shall be the judges; and

(*i*) Persons who satisfy the prescribed authority that their conscientious beliefs do not allow them to bear arms; and

(*j*) Persons engaged in any employment specified by the regulations or by proclamation.

Provided that, as regards the persons described in paragraphs (*g*) (*h*) and (*i*) of this section the exemption shall not extend to duties of a non-combatant nature.

Section 61a. Where any question arises as to whether a person is exempt from service in the citizen forces, the burden of proving the exemption shall rest on the person claiming the exemption, and applications for exemption shall be decided by the Courts authorised in that behalf by the regulations.

Section 140. The Governor-General may by proclamation—

(*a*) Exempt from the training in time of peace, all persons residing within any area specified in the proclamation;

(*b*) Vary or extend any area so specified; or

(*c*) Withdraw any exemption under this section; or

(*d*) Limit any exemption under this section to any part of the training required by this Act.

Section 140a. The Governor-General may by proclamation grant a temporary exemption for a period not exceeding one year to—

(*a*) Persons who reside outside the areas in which training is carried out; and

(*b*) Persons who reside at so great a distance from the places appointed for training that compulsory attendance at the training would involve great hardships.

Section 138 added to the exemptions permitted under section 61 the following:—

(*a*) School teachers who have qualified at a school of naval and military instruction, or other prescribed course as instructors or officers of the junior or senior cadets.

(*b*) Members of the permanent naval or military forces.

It is also provided that—

Persons who are students at a Theological College as defined by the regulations, or theological students as prescribed, may, while they remain such students, on application, be exempted by any prescribed authority from the prescribed training, but shall, on ceasing to be such students, undergo such equivalent training as prescribed, unless exempted by some provision of this Act.

Certificates of exemption will be issued in proclaimed areas by the area officer, in exempt areas by an officer specially appointed. In case of dispute the matter will be referred to the Brigade-Major or Commandant. If the decision of this officer is not accepted,

application may be made by the person claiming exemption to the Courts authorised in that behalf by the regulations, whose decision is final. Burden of proof rests upon the claimant.

Any person who has been convicted by a Court of a disgraceful or infamous crime, or is of notoriously bad character, is permanently disqualified for service.

(iv.) *Penalties for Prevention or Evasion.* Employers may not prevent their employees from serving; nor may persons liable to service fail to perform it. The provisions of the Act regarding prevention and evasion are:—

Section 134. (*a*) No employer shall prevent, or attempt to prevent, any employee who is serving or liable to serve in the cadets or citizen forces from rendering the personal service required of him, or from attending any camp of instruction appointed to be held by the headquarters of the Commonwealth or any military district, or in any way penalise, or attempt to penalise, any employee for rendering or being liable to render such personal service, or for attending such camp, either by reducing his wages or dismissing him from his employment or in any other manner:

Provided that this section shall not be construed to require an employer to pay an employee for any time when he is absent from employment for the purpose of training.

Penalty: One hundred pounds.

(*b*) In any proceedings for any contravention of this section, it shall lie upon the employer to show that any employee, proved to have been dismissed or to have been penalised or to have suffered a reduction of wages, was so dismissed penalised or reduced for some reason other than for having rendered or being liable to render the personal service required of him or from attending the camp.

Section 135. (*a*) Every person who in any year, without lawful excuse, evades or fails to render the personal service required by this Part shall be guilty of an offence, and shall, in addition to the liability under section one hundred and thirty-three of this Act,[1] be liable to a penalty not exceeding One hundred pounds and not less than Five pounds:

Provided that, in the case of a cadet, no penalty shall be recoverable under this section until the end of the year in which he attains the age of 18 years.

(*b*) Any penalty under this section may be recovered summarily on the information or complaint of a prescribed officer.

(*c*) In fixing the amount of the penalty, the Court shall have regard to the means of the person offending and those of his parents.

(*d*) In addition to any penalty imposed, or (where the Court is of the opinion that the imposition of a penalty would involve undue hardship) in lieu of imposing any penalty, the Court may, if it thinks fit, commit the offender to confinement in the custody of any prescribed authority for a time corresponding in duration to the time which, in the opinion of the Court, would be taken up in rendering the personal service required.

(*e*) Any person committed to the custody of a prescribed authority in pursuance of this section may be detained by that authority at any prescribed institution or place, and while so detained shall be subject to the regulations governing that institution or place, and to the training and discipline as prescribed.

(*f*) It shall not be necessary for the confinement to be continuous; but the person having the custody of the offender may (subject to the regulations) release him for such periods, and call upon him to return to custody at such times, as he thinks fit; to the intent that he may follow his occupation, and that the times and periods of his confinement may correspond, as nearly as practicable, with the times and periods which he ought to have occupied in rendering personal service.

(*g*) Any person detained in any prescribed institution or place in pursuance of this section who escapes therefrom, or who being released from custody fails to return thereto, may be arrested without warrant by any prescribed person, and taken back to the institution or place, and may on the application of any prescribed officer be ordered by any

1. Section 133 enacts that non-efficients must attend an equivalent additional training for each year they are non-efficient.

Court of summary jurisdiction to be detained for such additional period not exceeding twenty days as the Court thinks fit to order.

Section 136. Every person who, without lawful excuse, evades or fails to render the personal service required by this Part shall, unless and until he has performed equivalent personal service as prescribed, be and remain ineligible for employment of any kind in the Public Service of the Commonwealth.

(v.) *Efficiency Requirements.* The requirements for efficiency in the senior cadets comprise attendance at compulsory parades, as follows:—

4 whole day drills of not less than six hours; and
12 half-day drills of not less than three hours; and
24 night drills of not less than one and a-half hours.

These statutory parades will be increased by extra voluntary parades, the object of which is to enable those who are backward to become proficient, and those who desire to qualify for promotion to obtain the necessary practice. Where leave of absence has been given from a statutory parade, attendance at a voluntary drill will count towards the efficiency requirements; but a statutory parade missed without leave requires two voluntary parades as compensation.

At the end of the year's training, a Board of Officers will classify the trainee as efficient, or otherwise. Those not efficient must do an extra year's training for each failure.

Variations may be permitted in the compulsory half-day and night parades, but a total of seventy-two hours must be served. The whole day parades will usually be held on public holidays. Schools, containing at least sixty senior cadets, may form separate units, and may arrange their parades to suit their school time table; but the cadets must attend the battalion parades.

The efficiency requirements for citizen forces and reserves have not yet been promulgated.

(vi.) *Allotment to Arms.* During senior cadet training there will be no allotment to the various arms of the service. The work of the trainee will cover the foundation work necessary for service in any arm, viz.:—Marching, discipline, the handling of arms, musketry, physical drill, first aid, guards and sentries, tactical training as a company in elementary field work, and elementary battalion drill. Thereafter the cadet with special educational or technical qualifications will be drafted as a recruit to one or other of the specialist or departmental corps, other cadets passing to the "line regiments" of the Australian Army—the light horse and infantry.

(vii.) *Uniform and Equipment of Senior Cadets.* The uniform will be simple and inexpensive, but suitable. It will consist of hat, woollen shirt, woollen breeches, and puttees. It will be free, and issuable every second year. There will be no distinction, and uniform will be worn at all parades and drills. Wearing of uniform when not on military duty or proceeding to or from parade is forbidden.

Equipment consists of a cadet rifle with sling and a waist-belt with pouch. The elder senior cadets who are good shots (but not exceeding 10 per cent. of the strength) are also allowed .303 (service) rifles. Free ammunition is also provided, 150 rounds of ball being available for each cadet. Arms must be kept in the offices or storerooms of the units, and issued for parades only. On no account are arms permitted to be taken to the cadets' homes.

(viii.) *Citizen Forces.* On 1st July, 1912, the eldest class of those who shall have commenced senior cadet training on 1st July, 1911 (viz., those born in the year 1894) will pass as recruits to the various arms of the new citizen force, forming its first members. Uniform will be simple and suitable for service, and the issue to each soldier will be such that he is able to parade (upon notice) with two woollen shirts, two pairs breeches, greatcoat, hat, sleeping-cap, two pairs puttees or leggings, two pairs military boots, and kit-bag. The future force is planned to comprise 120,000 of all ranks,

including about 5000 citizen officers and 8000 non-commissioned officers. Promotion will be absolutely by merit, the principle adopted being that *the best soldiers must lead, whatever their civil avocation or birth.*

(ix.) *Reserves.* No new reserves are created under the Acts of 1909 and 1910. The present reserves consist of (*a*) officers, etc., retired from active service; (*b*) members of rifle clubs. Provision will probably be made for those who, at the age of 26 years, pass out of the organisations created under the Act, to continue service with rifle clubs; but if this if not enacted, it is considered probable that a large proportion of the fully-trained citizen soldiers will remain members of the clubs.

(x.) *Number under Training.* An estimate of the male population of Australia of military age gives 188,000 between 14 and 18 years, and 295,000 between 18 and 25 years. The estimated medical rejections (based upon the experience of European countries) will probably be 10 per cent. for senior cadets, and from 30 to 35 per cent. for citizen soldiers. To these must be added persons in exempt areas. The number under training, when the system is in full operation, is estimated at 100,000 senior cadets, and 120,000 citizen soldiers.

Members of Boys' Brigades, Imperial Boy Scouts, and kindred associations must undergo the training laid down under the Act. These organisations may continue on a voluntary basis, but they will not be excused from the required service.

(xi.) *Allotment of Units to Brigade, Battalion, and Training Areas.* Each battalion area is to furnish one battalion of infantry, and each brigade area (*i.e.*, four battalion areas), is to furnish in addition, one company of engineers, one company army service corps, and one field ambulance. Light horse and field artillery units will also be furnished by some of the areas. Personnel for garrison artillery and submarine and electric engineers for field forces will eventually be supplied in the areas nearest to such localities. The average annual contingent of recruits will be about 155 for each battalion area, plus such additions as are required for light horse and field artillery units raised therein. The figures shewn in the following tables are approximate, and include the recruits (18-19 year), but not the 25-26 year men.

ALLOTMENT OF UNITS TO BRIGADE, BATTALION, AND TRAINING AREAS.

State.	Brigade Areas.	Battalion Areas.						Training Areas.
			Providing the undermentioned units.					
	No.	No. of Battalions.	Infantry and Proportion of Engineers, A.S.C. and A.M.C. Nos.	Light Horse. Squadrons.	Light Horse. Nos.	Field Artillery. Batteries.	Field Artillery. Nos.	Total Nos. in Training in Areas.	No.
—	I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.
N. S. Wales ...	7	29	28,913	36	4,041	19	3,059	36,013‡	65
Victoria ...	8	33	32,901	40	4,490	20	3,220	40,611†	75
Queensland ...	3	11	10,967	16	1,796	7	1,127	13,890*	28
S. Australia ...	2	9	8,973	12	1,347	5	805	11,125§	24
W. Australia	2	7	6,979	4	449	3	483	7,911‖	20
Tasmania ...	1	4	3,988	4	449	2	322	4,759¶	12
Totals ...	23	93	92,721	112 28 Rgts.	12,572	56	9,016	114,309**	224

* Also 79 garrison artillery and 13 engineers for Lytton. † Also 766 for forts. ‡ Also 327 artillery and 227 engineers at Geelong and Queenscliff for forts. § Also 86 artillery for forts ‖ Also 156 artillery and 32 engineers for forts. ¶ Also 86 artillery and 32 engineers for forts. ** Also 1804 forts.

(xii.) *Higher Training.* The principal institution for the higher training of officers is the Military College, which has been established at the Federal capital. Entrance is by competitive examination, the first of which was held in February, 1911. Lectures and studies will commence later in the year. The course will last four years, and will be followed by a tour of duty in England or India, and a probationary year at area work. Graduates will eventually take the place of the area officers at present engaged; but it will be six years before any graduate of the college will be available; and fifteen years before all the area positions are supplied from it.

Government aid is also furnished to United Service Institutions, which have been established in the larger centres, and where lectures of great value are delivered by specialists, and war games, manœuvres, etc. carried out. Some of the institutions have large and well-selected libraries.

Schools of instruction, staff tours, etc., are also conducted, and a military magazine is to be published.

4. **The Naval Scheme.**—(i.) *Historical.* An outline of the development of the Australian naval policy will be found in Commonwealth Year Book No. 3, pp. 1060, 1061. For the more effective costal defence of the Commonwealth it was decided to create a naval force, Australian in character, to replace the squadron at present maintained under the naval agreement with the British Government. Engagements were entered into for the construction of three torpedo boat destroyers, two to be built in Britain, the other to be shipped to Australia in parts, and put together here. Proposals were also made for the construction of vessels in Australia. Skilled artisans were despatched from Australia to gain practical experience in the building of the vessels, and crews were specially trained for the service of them when completed.

(ii.) *Development of the Australian Navy.* The policy of development has continued with but slight variations in the proposals, despite three recent changes of Ministry.

A member of the Ministry, accompanied by naval and military expert advisers, attended the Imperial Defence Conference in London. The principal object of his mission, as declared by the Honourable the Minister of Defence in his second reading speech on the Defence Bill (21st September, 1909), was to concert with the other representatives as to the best measures to be taken to meet a common menace, particularly in the Pacific, where there must always be an outlet for Australian trade. The position was accepted that the burden of defence must in future be borne, not by part, but by the whole of the Empire, and therefore Australian plans and preparations must have the safety of the whole in view. As a fuller Imperial partnership is indispensable to the future security of the Imperial fabric, so a definite place in the Pacific must be allotted to Australia, as to other members of the Empire. It was agreed that Australia should provide an armoured cruiser of the *Indomitable* class, three unarmoured cruisers of the *Bristol* class, six destroyers of the improved "River" class, and three submarines; also the necessary auxiliaries, such as docks and depôt ships, for this fleet, which is to form a complete naval unit, and is to be one of the three divisions of the Eastern fleet. The British Government may provide an addition to this fleet. The cost of construction at English prices will be about £3,750,000, and the estimated annual cost about £750,000. Of this sum the Imperial Government offered to contribute £250,000, but the Commonwealth Government has decided to bear the whole cost.

The first instalment of the Australian fleet unit consists of the three destroyers already constructed. The first was launched at Govan-on-the-Clyde, on 9th February, 1910; the second at Dumbarton on 9th April following. The vessels are named after Australian rivers, those launched having been christened *Parramatta* and *Yarra*. These vessels were commissioned in September, 1910, as ships of the Royal Navy, and left Portsmouth on 19th September on their voyage to Australia. The crews had been sent from Australia to man the destroyers, and the Admiralty loaned 30 ratings to complete the complements. The Admiralty also arranged for the cruiser H.M.S. *Gibraltar* to be in touch with the destroyers throughout the voyage. In December, 1910, the vessels

arrived in Australia. The *Warrego* was shipped to Sydney in parts, and was re-erected at New South Wales Government dockyard, Cockatoo Island, Sydney. She was launched on April 4th, 1911. These destroyers are each of 700 tons displacement, with a length of 245 feet; beam of 24 feet 3 inches; draft, 8 feet 11 inches; depth 14 feet 9 inches. They have turbines, water-tube boilers and oil fuel, and have a legend speed of 26 knots. The armament consists of one 4-inch 30-pounder, three 12-pounders, and three 18-inch deck discharge tubes for torpedoes. The radius of action at cruising speed is nearly 3000 miles. The complement is 66 officers and men. It is intended to build the other three destroyers in Australia. The present annual naval subsidy (£200,000) will cease as soon as the larger obligation is taken over. While on the Australian station the ships will be under the exclusive control of the Commonwealth, both as regards movements and general administration, in time of peace. The *personnel* will be subject to the King's regulations, and under naval discipline, with standards of efficiency, and opportunities for advancement, as in the Royal Navy. The unit will pass under Imperial control whenever required for war purposes. It is to be manned as far as possible by Australians, supplemented by Imperial officers and men. A considerable number of the former are available, viz.—(*a*) those of the present permanent naval forces, (*b*) those in training with sections of the British fleet, (*c*) members of the Australian branch of the Royal Naval Reserve, (*d*) members of the Citizen naval forces, and (*e*) Senior naval cadets—a total of over 3000. A naval college will be established, and the necessary instruction imparted. The captain has been appointed on the recommendation of the British Admiralty, and will arrive in Australia in April to organise the college, which it is anticipated, will be built in Sydney. It is intended that there shall be interchangeability of officers and men, and also of ships. The British Admiralty invited tenders for the Australian *Indomitable* in January, 1910, and the tender of Messrs. John Brown and Co., Clydebank, was accepted. The vessel is now in course of construction, the date of completion being September, 1912. The ship is of the *Dreadnought* type, about 19,200 tons, with turbine engines. Her speed will be 26 knots, her armament eight 12-inch and sixteen 4-inch guns, and five torpedo tubes. She will have an 8-inch armour belt amidships, and a 4-inch belt at the ends. The estimated total cost of the vessel is £1,800,000. She will be named *Australia*. The three unarmoured cruisers will be known as the *Melbourne*, *Sydney*, and *Brisbane* respectively. The *Melbourne* is being built at the works of Messrs. Commell, Laird and Co. Ltd., of Birkenhead, and the *Sydney* at the works of the London and Glasgow Engineering and Iron Shipbuilding Co. Ltd., of Glasgow. These vessels will be about 5000 tons displacement, armed with 6-inch guns, and will cost about £450,000 each. It is the intention of the Government to build the third cruiser, the *Brisbane* in Australia, the raw material being imported. Tenders have also been accepted for the construction of two submarines, and it is anticipated that the vessels will be completed by the end of 1912.

(iii.) *Visit and Report by Sir Reginald Henderson.* At the invitation of the Government, Admiral Sir Reginald Henderson visited Australia to advise upon the best position for a central naval base, and the works necessary to make it effective; the positions for secondary bases for the service of a fleet, and their equipment for service in naval operations; also upon the location and character of the training schools for preparing *personnel* for the Australian naval service. The Admiral was also requested to report and advise on any other naval matters upon which he might care to express an opinion, and generally, in regard to all the measures to be taken in the formation of a fleet. After an inspection of various harbours, the Admiral propounded a scheme which he embodied in a report to the Government in March, 1911. It provides 52 vessels and 15,000 men; expenditure on ships, £23,290,000, with an ultimate annual naval vote of £4,794,000; construction of docks, £40,000,000. In twenty-two years the expenditure will be £88,500,000. Six naval bases, and eleven sub-bases, are recommended.

The 52 vessels of the completed fleet will be divided into Eastern and Western divisions, and will consist of 8 armoured cruisers, 10 protected cruisers, 18 destroyers, 12 submarines, 3 depôt ships, and 1 fleet repair-ship, the building of which will extend over 22 years. The *personnel* for this fleet, fully manned will be about 15,000. Of the

£23,290,000 initial cost of construction, the Commonwealth is already committed to £3,500,000. The annual cost of *personnel* will be £516,000 in 1912-3; and will increase to £2,226,000 in 1932-3. Annual cost of maintenance of ships in commission will be £262,000 in 1913-4; rising to £1,226,000 in 1933-4. Annual expenditure on construction and maintenance of ships will increase from £1,491,000 in 1912-3 to £4,824,000 in 1932-3. In 22 years the expenditure on the fleet alone will be £73,275,000; this, with an expenditure on fleet and harbour works of £15,225,000, makes a grand total of projected expenditure of £88,500,000. The strength of the fleet will be 23 ships in 1918, 42 ships in 1923, 48 ships in 1928, and 52 ships in 1933. In the earlier years most of the crews will be obtained from Great Britain; but this will cease in the period 1923-8. A system of "wireless" stations is recommended; also the establishment of naval reserves, the erection of barracks, and the institution of a naval college.

§ 7. Expenditure on Defence.

1. **Expenditure, 1905-6 to 1910-11.**—The following table gives the expenditure of the Department of Defence from 1905-6 to 1909-10, and the estimate for 1910-11:—

EXPENDITURE ON DEFENCE, 1905-6 to 1910-11.

Branch or Department.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.	1910-11 Estimate
	£	£	£	£	£	£
Central Administration	18,832	19,246	21,913	23,884	26,358	†120,471
Naval Forces	45,753	50,200	54,069	59,250	63,168	101,133
Military Forces	500,379	535,182	577,490	623,372	853,532	1,029,758
Rent, Repairs, and Maintenance ...	29,721	27,378	32,014	31,817	29,561	40,366
Additions and New Works	33,556	35,171	46,968	53,965	81,899	186,845
Defence Arms, Equipment, &c. ...	138,077	159,988	143,950	47,206	196,481	297,300
Audit Office	765	810	817	966	945	1,175
Pensions and Retiring Allowances ...	907	974	974	1,017	1,306	847
Supervision of Public Works by State Officers	659	521	700	822	1,046	6,000
Naval Agreement	200,025	200,000	200,000	200,000	200,000	200,000
Miscellaneous "Other"	1,671	6,325	5,849	8,291	20,585	...
Fleet Unit	...	...	...	...	60,000	850,000
Total	970,345	1,035,795	*1,084,744	1,050,590	1,534,881	2,833,895

* In addition, the sum of £250,000 was paid into trust fund for harbour and coast defence.
† Includes establishments under the control of the Central Administration.

2. **Estimates, 1910-11.**—(i.) *Comparison with Preceding Year.* The administration estimates for 1910-11 shew an increase of £247,300 on those for the preceding year. The increase is shewn under the following heads:—

Central administration (including establishments under its control) ...	£73,268
Naval forces	32,590
Military forces, cadets, rifle clubs, and associations	141,442
	£247,300

(ii.) *Central Administration.* The principal increases are:—Cordite factory, £7583; Small Arms factory, £5675; Universal training, £23,000; Military college, £17,000; Naval college, £4675.

Provision is made for the staffs of the cordite and small arms factories for portion of the year, in anticipation of these establishments commencing active operations before the year expires.

The amount appropriated under universal training includes the expenses of training area officers and new non-commissioned officers of the instructional staff, appointed in accordance with the new scheme of compulsory service.

The Staff of the Military College has been appointed, and the pay of its officers and the general expenses of the institution have been provided for.

As a preparatory measure for providing the *personnel* of the fleet unit, which is to come into being in 1912, provision is made for the necessary staff for the initiation of a naval college for training cadets as officers.

Other amounts provide for the establishment of schools of instruction in gunnery, torpedo, signals, etc., and for a school for training boys as seamen.

(iii.) *Naval Increase.* An increase of 159 in the *personnel* is made, to provide the necessary crews for the three destroyers, *Parramatta*, *Yarra*, and *Warrego*. For the maintenance of these vessels the sum of £15,000 is provided.

(iv.) *Military Increase.* The principal increases in military expenditure, other than that given under central administration, are Permanent Forces, £42,291; and Militia Forces, £100,457; while a decrease of £15,682 is shewn regarding Volunteer Forces.

The increase of £42,291 for Permanent Forces is made up chiefly of Instructional Staff, £20,195; Royal Australian Artillery, £17,800; and Ordnance Department, £3118.

Pay is provided for the newly-appointed members of the Instructional Staff from 1st January, 1911, on which date they left their camp of instruction to commence service in their respective areas.

Two permanent batteries of field artillery (one in New South Wales and one in Victoria) have been created. Provision is also made for the purchase of an additional 68 horses for the proper horsing of the guns of the field artillery batteries.

The *personnel* of the Ordnance Department is increased, in order to cope with the large increase in volume of work and quantity of stores which will be required under the new schemes; and to provide examiners of stores and equipment on charge to regiments.

The volunteer forces were converted into militia as from 1st January, 1911, thus increasing the militia vote, and almost obliterating the amount previously voted for volunteers. The militia are being brought up to peace establishments. A sum of £62,000 is provided for the purchase and maintenance of 1285 horses for the field artillery batteries. The annual cost of hiring horses under the present system is approximately £37,500.

Under universal cadet training, a sum of £180,000 is provided for supply of stores, training of cadet officers, rent of stores for cadet equipment, allowances to area officers, and expenses incidental to the establishing of universal training. This is an increase of £30,000 on the amount voted for 1909-10, which was expended on the purchase of cadet rifles.

3. **Expenditure Compared with Various Countries.**—The total expenditure on defence and the expenditure per inhabitant, according to the latest available estimates, are, in the countries indicated, as follows:—

EXPENDITURE ON DEFENCE—VARIOUS COUNTRIES.

Country.	Year.	Army.	Navy.	Total.	Per Inhabitant.
		£	£	£	s. d.
Great Britain ...	1909-10	27,435,000	35,143,000	62,578,000	27 8
Germany ...	1909	40,676,000	20,427,000	61,103,000	19 2
France	1909	31,994,000	13,354,000	45,348,000	23 0
Italy	1908-9	11,028,000	5,676,000	16,704,000	9 9
Austria-Hungary ...	1909	13,535,000	2,643,000	16,178,000	6 6
Switzerland ...	1909	1,607,000	—	1,607,000	8 11
Russia ...	1908	44,941,000	9,186,000	54,127,000	8 8
Spain ...	1909	6,319,000	1,951,000	8,270,000	8 4
Norway ...	1908-9	760,000	287,000	1,047,000	8 11
Sweden	1909	2,700,000	1,050,000	3,750,000	13 9
Denmark ...	1909-10	736,000	461,000	1,197,000	8 11
Holland	1909	2,290,000	1,645,000	3,935,000	13 4
Belgium	1909	2,327,000	—	2,327,000	6 5
United States ...	1909-10	26,667,000	26,041,000	52,708,000	11 10
Canada	1907-8	1,200,000	—	1,200,000	4 0
Japan	1909-10	8,971,000	7,325,000	16,296,000	6 8
Australia ...	1910-11	1,682,762	1,151,133	2,833,895	12 8

§ 8. The War Railway Council.

1. **The Constitution of the Council.**—It was suggested by Lord Kitchener that a War Railway Council should be appointed to secure co-operation between the Commonwealth Defence Department and the States Railway Departments in regard to concentration and mobilisation of troops. A conference, whose members comprised staff-officers of the Commonwealth forces and the chief railway commissioners of the States, was held in Melbourne in February, 1911, under the presidency of the Minister of Defence, and in March the report was made available. The decisions are embodied in a series of twenty resolutions. It is recommended that the War Railway Council should be constituted of eleven members as follows:—The quartermaster-general as president; the senior officer of the engineer and railway staff corps of the Commonwealth railway system and of each State railway system, the consulting military engineer, and two representatives of the naval and military forces as members; and a military officer as secretary. An engineer and railway staff corps is proposed, consisting at its commencement of 48 members, composed of officials of the Commonwealth and State government railways holding honorary military rank.

2. **Duties in Time of Peace.**—The duties of the council in time of peace would be generally to furnish advice to the Minister of Defence on railway matters, and particularly (*a*) to determine the method of supplying information to, and obtaining it from, the various railway departments; (*b*) to suggest regulations and instructions for carrying out movements of troops; (*c*) to suggest the method of organising railway staff officers in time of war, to act as intermediaries between the various railway authorities and the troops; (*d*) to consider the question of extra sidings, loading platforms, etc., and proposals towards unification of gauges; (*e*) to suggest the organisation and system of training of railway troops when the development of universal training supplies sufficient personnel whose ordinary employment is railway work; (*f*) in time of war to advise also on questions of mobilisation.

3. **Control of Railways in War.**—In times of war, the chief commissioner or general manager of any railway system of which the Commonwealth government assumes control should be appointed Director of Railways, and should have command of "Railway Control Officers" to be specially appointed as intermediaries acting between the railway administration and the troops. The chief duties of these control officers would be (*a*) to facilitate the transport of troops, animals, and material; (*b*) to act as channels of communication between the military authorities and the technical railway *personnel*; (*c*) to advise the local military authorities as to the capacity and possibilities of the railway; (*d*) to bring to the notice of the Director of Railways any means by which the carrying power of the railway may, for military purposes, be increased.

4. **Uniform Railway Gauge.**—The Council recommends the adoption of a uniform gauge of 4 ft. 8½ in. on the lines linking up the capitals between Brisbane and Fremantle and also on the proposed transcontinental line from Kalgoorlie to Port Augusta, the cost of conversion to be shared upon a basis to be determined between the Commonwealth and the States.

§ 9. Relation to the Empire.

During the New Zealand wars many colonists served with the British forces, their service generally being purely as individuals. At the outbreak of the war, the *Victoria*, a steam sloop of 450 tons register, with an armament of seven 32-pounders, and a crew of 95, a large percentage of whom had been in the Royal Navy, was offered by the Government of Victoria to the Imperial authorities for service in the New Zealand waters. The offer was accepted, and the vessel proceeded to Auckland, calling *en route* at Hobart, where she took on board part of the 40th Regiment (Imperial). The *Victoria* was employed continuously in transport and various operations along the coast until the termination of the war. In 1885 a field battery, an infantry battalion, and an ambulance corps, numbering in all 770, with 218 horses, left New South Wales to take part in the Suakin campaign. Lord Wolseley's despatch of 15th June, 1885, reads:—"The result was so satisfactory that I trust the noble and patriotic example set by New South Wales may, should occasion arise, be followed by other colonies."

In 1899 the outbreak of war with the Boers led to the several colonies offering contingents. This service was continued when, on 1st March, 1901, the control of the defence forces passed over to the Commonwealth. Besides the troops officially organised many Australians served as individuals in the campaign. The following table shews the strength of the military contingents sent at various times from Australia to South Africa:—

STRENGTH OF MILITARY CONTINGENTS SENT FROM AUSTRALIA TO SOUTH AFRICA.

State.	State Troops at State Expense.			State Troops at Imperial Expense.			Commonwealth Troops.			Grand Total.		
	Officers.	Other Ranks.	Horses.	Officers.	Other Ranks.	Horses.	Officers.	Other Ranks.	Horses.	Officers.	Other Ranks.	Horses.
New South Wales ...	160	3,217	3,135	76	1,308	1,443	78	1,271	1,294	314	5,796	5,872
Victoria	47	751	830	77	1,569	1,877	69	1,052	1,118	193	3,372	3,825
Queensland	39	694	868	73	1,346	1,603	37	699	736	149	2,739	3,207
South Australia ...	20	326	258	46	644	696	23	467	490	89	1,437	1,444
Western Australia ...	18	331	269	34	540	608	15	291	306	67	1,162	1,183
Tasmania	6	173	58	17	358	422	13	290	303	36	821	783
Total	290	5,492	5,418	323	5,765	6,649	235	4,070	4,247	848	15,327	16,314

There were, in addition, several special service officers attached, at the request of the colonial Governments, to the British forces; these officers served with the Imperial troops with a view to aiding the development of the Commonwealth forces, particularly in regard to the routine and administration of troops on service.

The Home Government also accepted the offer of contingents from Australia on the outbreak of the Boxer rebellion in China. Naval volunteers were furnished by New South Wales and Victoria, and South Australia equipped a gunboat for the Imperial service. The strength of the New South Wales contingent was 260, and that of the Victorian 200, of all ranks.

§ 10. University Course in Military Science.

Following upon the endowment by the Sydney University of a Chair of Military Science, a curriculum, to extend over a period of three years, commenced in March, 1907. Completion of the course entitles the student to a diploma in military science, and students not completing it receive certificates for any courses in which they have given satisfaction.

The courses for the first year are Military History and Science I. and Military Engineering. In the former subject ten lectures are given in military history and ten in strategy, and in the latter there are ten lectures with five days' practical instruction. In the second year the subjects are Military History and Science II. and Military Topography. The former comprises ten lectures in military history and ten in Imperial defence. In topography ten lectures and seven days' practical instruction make up the course. The subjects for the third year are Military History and Science III. and Military Law and Administration. Ten lectures in military history are joined with ten in tactics to make up the former, while there are ten lectures in the latter course.

The lectures for diploma are given at the Sydney University during Lent and Trinity terms. Short continuous courses of instruction in military subjects for the benefit of officers of the permanent and citizen forces are also arranged, the lectures being delivered during Michaelmas term.

§ 11. The Defence Forces of New Zealand.

The natives of New Zealand have generally shewn themselves well disposed to the British colonists, but in 1845-8 and 1860-70 there were native wars. In these, many of the tribes fought for the Colonial Government. Colonists joined with the Imperial troops in the campaign that began in 1845. In October, 1847, a detachment of Imperial soldiers arrived, under an agreement to perform garrison duty for a few days each year for seven years, and to be constantly in readiness for military service if required, in return for which each soldier received an acre of land with a cottage thereon. The New Zealand Fencibles were also constituted during the first Maori war. In 1860 volunteer forces were raised to fight with the Imperial troops. Military settlers were also enrolled in Australia and other places for service in New Zealand. During the war the Imperial troops were withdrawn, the Colonial Government undertaking its own defence. After the conclusion of the war, part of the field force was organised into a permanent artillery unit. The defences of the Dominion are now constituted under Acts of 1886, 1900, 1906, 1907, and 1909. In 1882 the strength of the forces maintained was 7367—made up of 732 cavalry, 907 artillery, 380 engineers, and 5348 infantry. The colony furnished 150 (approximately) officers and 4850 men for the South African war.

The Royal New Zealand Artillery, a permanent force, and auxiliary units of various arms, make up the military forces of the Dominion. Administration and control is in the hands of the Council of Defence. The Act of 1909 obliges all males between the ages of 14 and 21 years to undergo military service. The following table gives the strength of the various corps at the end of 1909:—

STRENGTH OF NEW ZEALAND DEFENCE FORCES, 31st DECEMBER, 1909.

HEADQUARTERS AND DISTRICT STAFFS	74
PERMANENT—	
Royal N.Z. Artillery (including Electric Light sections) ...	261
VOLUNTEERS—	
Field Artillery	456
Garrison Artillery Division ...	1,194
Engineers and Railway Pioneers	380
Mounted Rifles	4,186
Infantry, Cycle, and Signalling Corps	6,479
Field Ambulance Corps ...	215
Garrison Bands	148
Battalion Bands	383
Grand total trained ...	13,776

In addition there are the following:—Unattached officers, 213; reserves, 244; medical staff, 170; veterinary staff, 19; defence cadets, 4101; and rifle club members, 3596. The grand total of the defence forces is therefore 22,119.

The following table gives the military expenditure of New Zealand from 1904-5 to 1908-9:—

MILITARY EXPENDITURE, NEW ZEALAND, 1904-5 to 1908-9.

Year	1904-5.	1905-6.	1906-7.	1907-8.	1908-9.
Expenditure ...	£241,848	£196,328	£169,359	£200,997	£202,982

SECTION XXIX.

PAPUA (BRITISH NEW GUINEA).

§ 1. New Guinea.

1. **Geographical Situation of New Guinea.**—New Guinea, frequently described as the largest island in the world, lies to the north-east of Australia, between 0° 25′ and 10° 40′ S. latitudes, and between 130° 50′ and 150° 35′ E. longitudes. Its estimated area exceeds 300,000 square miles, the greatest length being 1490 miles and the greatest breadth 430 miles.

2. **Discovery.**—The island was probably sighted by Abreus in A.D. 1511. The first visit by Europeans was apparently either that by the Portuguese Don Jorge de Menesis on his way from Goa to Ternate in 1526, or that by the Spaniard Alvaro de Saavedra in 1528. In 1606 Torres, having parted company with De Quiros at the New Hebrides, sailed, on his way to the Philippines, through the strait which separates the island from Australia, and which now bears his name.

3. **Colonisation.**—Little progress was made for many years in exploration and settlement. First the Portuguese, and afterwards the Dutch, who to a great extent replaced them as the principal European traders in the East, seem to have jealously excluded other traders and adventurers, and to have kept the knowledge of their discoveries to themselves. The coasts were visited by Roda, Schouten, Lemaire, Tasman, Dampier, Torres, Bougainville, and Cook; but the difficulties of navigation, the savagery of the islanders, and the tempting fields for enterprise in the more temperate regions further south, diverted the energy of traders and voyagers. Forrest describes a voyage by himself in 1774. In 1793, New Guinea was annexed by two commanders in the East India Company's service. Since that date the Dutch have made extensive surveys of the western portion, and the British and Germans have occupied and colonised the eastern.

4. **Partition.**—These three powers have agreed to the partition of New Guinea, each having suzerainty over islands adjoining its own territory. The whole of the portion west of the 141st degree of latitude, comprising about 150,000 square miles, or nearly half the island, belongs to the Dutch. The eastern half is divided in almost equal portions between Great Britain and Germany, the area possessed by each (with adjacent islands) being about 90,000 square miles. An Anglo-German boundary commission, appointed for the purpose of defining the boundary between the territories of the two nations, started operations on 26th December, 1908, and completed the field-work on 27th October, 1909. The total length of boundary delimited was 66¼ miles. The work was both important and difficult. For a considerable portion of the survey, the country was exceedingly rough and mountainous, and the natives hostile. In one instance, the line was carried over a range at an elevation of 11,110 feet. The Dutch colony forms part of the residency of Ternate in the Moluccas, and has not been extensively developed. The German protectorate, where considerable political and commercial development has taken place, includes the northern part of the eastern half of the mainland, known as Kaiser Wilhelm's Land, and the large islands of the Bismarck Archipelago and the Solomon Group, as well as nearly 200 smaller islands. The south-eastern portion of New Guinea, nearest Australia, is British, and a dependency of the Commonwealth of Australia.

2. The Australian Dependency of Papua.

1. **Australian Dependency of Papua.**—Surveys of the east coast of New Guinea by Stanley, Yule, Blackwood, Moresby, and others, brought home to Queensland, and to Australia generally, the danger to her commerce which would result from foreign possession of the islands and coasts opposite to Cape York, and from the holding by a hostile power of the entrance to the splendid waterway inside the Barrier Reef. The mainland opposite the shores of Queensland east of the 141st meridian was therefore annexed by that colony in 1883; but the action was disallowed by the British Government. In 1884, however, a British protectorate was authoritatively proclaimed by Commodore Erskine over the region lying east from the 141st meridian as far as East Cape, with the adjacent islands as far as Kosman Island. In the year following an agreement with Germany fixed the boundaries between the possessions of the two countries, and to Great Britain was assigned the portion now known as Papua, lying between the extreme limits of 5° and 12° S., and 141° and 155° E. The British protectorate was subsidised by Queensland, New South Wales, and Victoria, and lasted till 4th September, 1888, when it was proclaimed a possession of the Empire. Its constitution was then that of a Crown colony, in association, however, with Queensland. Administration was in the hands of a Lieutenant-Governor, aided by an executive and a legislative council, and advised by a native regulation board. Port Moresby, on the south coast, was made the headquarters of the official establishment; a supreme court was established there, and magisterial courts in the districts; and an armed native constabulary force, numbering 213 on 30th June, 1910, under a European officer, was instituted for the maintenance of order.

2. **Annexation by Commonwealth.**—The territory was placed under the authority of the Commonwealth on 1st September, 1906, by proclamation issued in pursuance of Letters Patent of the 18th March, 1902, and was accepted by the Commonwealth by the Papua Act, 1905, which came into force by virtue of the proclamation aforesaid. The transfer was made under the authority of section 22 of the Constitution (see p. 38 hereinbefore). The territory is now under the administration of the Commonwealth, but not included within it.

3. **Physical Characteristics.**—The British Territory of Papua lies wholly within the tropics. The northernmost point touches 5° S. latitude; its southernmost portion, comprising Sudest and Rossel Islands, lies between 11° S. and 12° S. latitude. It is separated from Australia by Torres Straits. The length of Papua from east to west is upwards of 800 miles; towards either end the breadth from north to south is about 200 miles, but about the centre it is considerably narrower. The territory comprises also the islands of the Trobriand, Woodlark, D'Entrecasteaux, and Louisiade groups. The length of coast-line is computed at 3664 miles—1728 on the mainland and 1936 on the islands. The total area is about 90,540 square miles, of which 87,786 are on the mainland and 2754 on the islands. From the eastern end of the territory rises a chain of mountains, which forms a great central ridge and attains its greatest altitude, as it extends westwards, in the Owen Stanley Range, the highest points of which are Mount Victoria (13,200 feet), Mount Scratchley, the Wharton Range, and Mount Albert Edward. The western end of the possession is for nearly 300 miles generally low and swampy for some distance along the coast. The whole territory is well watered. The great mountains and a great portion of the lower country are covered with forest. The islands are mountainous, and, with the exception of the low coral islands of the Trobriand Group, part of Murua, and a few others of small dimensions, principally of volcanic formation. The highest is Goodenough Island, 8000 feet. The largest rivers of the mainland flow into the Gulf of Papua. The Fly River, with its tributaries, drains an extensive area of the territory of the Netherlands, as well as the British. Its length in British territory is about 620 miles, and it is navigable by a steam launch for over 500 miles. Other important rivers are the Turama and the Purari. There are many excellent harbours.

§ 3. Population.

The total white population of Papua on 30th June, 1910, was 879, made up of 662 adult males and 135 adult females (adults being persons over 16 years of age), and 42 male and 40 female children. The following table gives the population of Papua for the last five years:—

WHITE POPULATION OF PAPUA, 1906 to 1910.

YEAR ENDED 30TH JUNE.

1906.	1907.	1908.	1909.	1910.
687	690	711	702	879

It is not possible to make a reliable estimate of the number of natives, owing to the fact that much of the interior country is unexplored. It is generally assumed to be somewhere between 400,000 and 500,000. These speak many languages and dialects. The coloured population, other than Papuans, numbered on 30th June, 1910, 451. On the same date, half-castes, including Papuan half-castes, totalled 273. An Immigration Restriction Ordinance prohibits the immigration into the territory of persons who fail to pass the dictation test, or who are persons of bad character, or likely to become a charge upon the public. Exemptions may, however, be granted by the Lieutenant-Governor to persons of special skill whom it is desired to employ as overseers or foremen.

4. Native Labour.

The rights of both employer and labourer are conserved by the Native Labour Ordinance. Service on the part of the native is voluntary, and he must be justly treated, and properly housed and fed. Employers may recruit personally, or obtain their natives through a licensed recruiter. Contracts of service must be in writing, entered into before a magistrate or other qualified officer, and the natives must be returned to their homes on completion of engagement. During the period of service the recruiter or employer is personally responsible for the native's welfare. Refusal to work after engagement, or desertion from service, renders the labourer liable to imprisonment. On the other hand, a magistrate may terminate an engagement where unjust or harsh treatment by the employer is proved. The term of indenture must never exceed three years, and in the case of miners and carriers eighteen months is the limit, but re-engagements may be made. The magistrate must satisfy himself that the remuneration is fair, that the native is willing to undertake the service, and that there is no probability of unfair treatment or detention. Wages must be paid in the presence of an officer. A medicine chest, stocked with necessary drugs and first aid instruments, must be kept by all employers.

Just treatment, good food, and satisfactory remuneration for his labour has made the Papuan savage an excellent servant. With considerable natural aptitude and intelligence, he is able to understand readily what is required by his employer; consequently native labour is very largely engaged by the Administration for the construction of roads and public works, and by the private employer for the clearing and upkeep of plantations.

The number engaged under contract of service during the year ended 30th June, 1910, was 5585. In addition, there were 1947 persons employed who were not under contract of service.

§ 5. Production.

1. **Papuan Products.**—The products of the territory are obtained from its agricultural, forestal, fishing, mining, and manufacturing industries. A Papuan court has been opened at the Imperial Institute, London, where a representive collection of products is being made.

2. **Agriculture.**—(i.) *Soil and Rainfall.* The physical features of Papua are favourable to agriculture. Rich soils at varying elevations, and heavy and evenly-distributed rainfall, have ensured success in cultivating almost every tropical product of value. The territory comprises immense areas of rich alluvial and volcanic soils along the coast, and equally fertile land at elevations up to 6000 feet. Splendid rainfalls are recorded, except over a belt of country which runs back from the coast to the hills, and which has its dry season from May to November. This "dry" area is admirably suited for the production of tobacco, fibres, cotton, etc. An economic museum and agricultural library have been established. By anticipating and removing many of the pioneering difficulties the Government has made the task of the colonist an easy one.

(ii.) *Plantations.* On 31st March, 1910, there were 151 plantations. Agricultural settlement has been mostly in the Central and Eastern Divisions, though plantations are rapidly spreading in other districts, particularly the South-Eastern. The total area planted was 10,053 acres, or an average of 66 acres for each plantation. There are also large areas cleared ready or planting. The principal plantation industries entered upon up to the present are cocoa-nuts, rubber, sisal hemp, and coffee. Secondary agricultural industries are the cultivation of bowstring hemp, cotton, vanilla, kapok, cocoa, tapioca, cinnamon, tea, and tobacco. The following table shews the areas under the different cultures (exclusive of maize and vegetable products) on 31st March, 1910:—

	Acres.
Cocoanuts	6,716
Rubber	1,886
Sisal hemp	1,131
Coffee	176
Other cultures	144
Total	10,053

(iii.) *Government and Native Plantations.* There are six Government plantations of cocoanuts and para rubber, with a total area of 229 acres. The natives are compelled by an ordinance to plant cocoanuts for food supply. It is estimated that the total area so planted amounts to 350,000 acres.

(iv.) *Government Nurseries and Experimental Stations.* Sylvicultural nurseries have been established with the object of supplying settlers with seeds and plants, which have been imported from the East and West Indies, Central America, tropical Australia, Ceylon, the Malay States, and the Solomon Islands. Attached to the nurseries are experimental stations, where the suitability of soil and climate for the different products are tested and correct methods of cultivation demonstrated. Four nurseries have been established, the total area being about 190 acres. From these, 102,500 para rubber trees and seeds; 417,700 sisal hemp plants; 600 bowstring hemp plants; and various other plants have been distributed to planters. A Government orchard, for supplying fresh fruit and vegetables, has been established at one of the experimental stations, and yields considerable quantities of European fruit-foods.

(v.) *Indigenous Products.* There are many indigenous plants of great economic value. These comprise sandalwood and other timber trees, sugar-cane, cotton plants, rubber-both, vine, nutmegs, ginger, bamboos, palms, bananas, bread-fruit, edible nuts, sago-palms, fruits, and vegetables.

3. **Live Stock.**—On 30th June, 1910, the live stock in the territory consisted of 318 horses, 1123 head of cattle, 66 mules, 71 sheep, and 557 goats. A Government stud farm

has been established, for the breeding of horses. On 5th February, 1910, twenty-two stud mares, most of them in foal, were imported from Queensland. The importation of an Arab stallion is contemplated. The introduction of rabbits, foxes, hares, and monkeys is prohibited.

4. **Forest Products.**—There is a large variety of useful timbers in Papua. Of 120 varieties that have been catalogued, 16 are adapted to resisting heavy strains, and are suitable for girders, railway waggons, etc.; 10 for railway carriage and coach building; 15 for joinery, lining, flooring, etc.; 14 for butter boxes; 5 for boat building; 4 for piles; and 15 for cabinet work. Sandalwood is indigenous. It is largely used for cabinet work, and santal oil is distilled from its roots. Ebony is also produced for export. Rubber is a promising industry. There are considerable areas of native rubber (*Ficus Rigo*), but the planters generally prefer the imported para rubber. Guttapercha is obtained from species of *palaquium*, which grow on the hills. Drugs, dyewoods, and spices are also obtained from indigenous plants. Several saw mills have been imported, but up to the present little actual work has been accomplished. Contracts have, however, been made by residents to ship timber to Great Britain.

5. **Fisheries.**—Pearl-shell fishing occupies an important place in the industries of Papua. A considerable number of luggers is licensed, but the returns are mostly credited to Queensland, whose boundary approaches to within a few miles of the Papuan coast. The species of tortoise which supplies the commercial tortoise-shell is also a native of the territory. Bêche-de-mer is found along the shores and reefs. There is a dugong fishery on the coast of the Western Division.

6. **Mining.**—(i.) *Variety of Minerals.* Minerals have been discovered in many places, and over an extremely wide range. Those discovered so far are—gold, copper, silver, tin, lead, zinc, cinnabar, iron, osmiridium, gypsum, manganese, sulphur, and graphite. Of precious stones, only the topaz and beryl have been obtained. Large beds of apparently good coal also exist.

(ii.) *Gold.* In 1878 gold, the existence of which in the territory had long been known, was unsuccessfully sought by a party of Australian miners. Ten years later the first field was discovered. The search has now spread over every division, and finds have been recorded wherever the explorers have gone. The quantity and value of the gold yield for five years are given below:—

GOLD YIELD, PAPUA, 1905-6 to 1909-10.

1905-6.		1906-7.		1907-8.		1908-9.		1909-10.	
Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
ozs. 24,227	£ 87,869	ozs. 16,103	£ 58,886	ozs. 14,557	£ 51,024	ozs. 14,710	£ 51,108	ozs. 16,151	£ 60,181

Most of the rivers, with the exception of those flowing into the Gulf of Papua, have been declared open to gold-dredging, and good yields have been obtained from many of the rivers thus dredged.

The Gold-buyers Ordinance (Ordinance XVIII. of 1909) provides for the issue of licenses to buy gold, and imposes a penalty in respect to the purchase of gold by unauthorised persons.

(iii.) *Copper.* A rich and extensive copper field has been proclaimed, and about 30 square miles of it are being worked. There are indications that the mineral exists over a much wider region.

(iv.) *Other Minerals.* Some good samples of galena (sulphide of lead) have been obtained. Small quantities of cinnabar (sulphide of mercury), graphite (or plumbago), osmiridium (or iridosmine), zinc, native sulphur and other minerals are also found.

A mineral laboratory and museum has been fitted up, and is available to prospectors and others interested.

7. **Manufactures.**—The chief native manufactures are pottery, canoes, fishing nets, mats, shell ornaments, stone implements, and decorated gourds.

§ 6. Statistical Summary.

1. **Revenue and Expenditure.**—The revenue and expenditure for 1909-10, under principal heads, are given below; also a summary covering a period of five years :—

REVENUE OF PAPUA, 1909-10.

	£
Customs receipts	24,901
Postal receipts	2,229
Judicial fines and fees	517
Land leases	473
Liquor licenses	297
Native labour fees	845
Sanitary fees	97
Timber licenses	38
Fishing licenses	61
Rubber collecting licenses	43
Bird collecting licenses	20
Sale of drugs	7
Sale of Government property	1,335
Native hospital fees	228
Sale of plants and seeds	400
Mining receipts	877
Trading stations	59
Proceeds sale of water	10
Receipts from Curator of Intestate Estates	66
Government slip dues, and services of carpenters	177
Merrie England refunds and earnings	368
Printing office fees	50
Prison receipts	118
Pearl buyers' licenses	225
Interest from trust funds	80
Sale of forfeited allotments	297
Appropriation of former years	364
Money order commission	45
Stamp duties	154
Arms permits	61
Land deposits forfeited	141
Miscellaneous receipts	239
Total	£34,822

EXPENDITURE OF PAPUA, 1909-10.

	£
Lieutenant-Governor, Civil list	2,035
Government Secretary's Dept.	2,330
Treasury & Postal Department	4,382
Magistrates	6,718
Armed Native Constabulary	5,180
Gaols	2,413
Lands Department	1,351
Mines Department	12
Public Works Department	11,193
Medical	5,230
Merrie England	7,890
Other vessels and boats	2,577
Survey Department	2,627
Department of Agriculture,	2,194
Delimitation of Anglo-German boundary	1,496
Refunds from revenue	193
Department of Native Affairs	792
Central Court	218
Miscellaneous	6,043
Total	*£64,874

* The figures in this table do not, in all cases, agree with those shewn on page 817 hereinbefore. Those on this page were taken from the "Report on Papua," while those on page 817 were obtained from the "Commonwealth Auditor-General's Report."

REVENUE AND EXPENDITURE OF PAPUA, 1905-6 to 1909-10.

Item.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.
			£	£	£
Revenue	20,236	21,813	26,019	27,706	34,822
Expenditure	38,350	45,335	48,525	51,824	64,874

2. **Imports and Exports.**—The value of imports and exports for five years is shewn in the table below. The figures for 1907-8 and 1908-9 evidenced considerable expansion

in trade over former years; and those for 1909-10 shewed an advance over 1908-9 of £25,497 in imports, and £20,907 in exports.

VALUE OF IMPORTS AND EXPORTS OF PAPUA, 1905-6 to 1909-10.

Particulars.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.
	£	£	£	£	£
Imports	79,761	87,776	94,061	94,680	120,177
Exports	80,290	63,756	80,616	79,692	100,599
Total trade	160,051	151,532	174,677	174,372	220,776

The principal articles of import are foodstuffs, which in 1909-10 reached a total value of £35,785. The chief other imports in that year were:—Hardware and ironmongery, £16,047; drapery and clothing, £14,366; tobacco and cigars, £9659; building material, £5991; machinery, £4322; boats and launches, £3969; wine, spirits, and beers, £3677; and oils and kerosene, £3202. In each of the five years under review gold has formed considerably more than half the value of the total export. In 1909-10 the value of this metal exported reached £59,427. Other principal exports were:—Copra, £24,948; bêche-de-mer, pearls, pearl and turtle shell, £6849; sandalwood, £4628; copper ore, £1439; rubber, £904; coffee beans, £654; timber, £263; natural history specimens, £262.

3. **Postal and Shipping.**—Considerable development has been shewn in means of communication—the postal returns, and the tonnage of vessels cleared at Papuan ports, having lately largely increased. Particulars regarding postal matter are given hereunder:

POSTAL STATISTICS OF PAPUA, 1905-6 to 1909-10.

Year.	Letters.		Packets.		Newspapers.	
	Received.	Despatched.	Received.	Despatched.	Received.	Despatched.
1905-6 ...	38,273	40,120	7,221	2,656	41,014	10,489
1906-7 ...	49,541	41,036	7,487	2,581	38,374	12,846
1907-8 ...	53,118	47,521	6,655	3,137	44,052	12,674
1908-9 ...	57,055	51,259	8,608	3,997	48,070	14,320
1909-10 ...	64,357	56,776	8,893	5,575	52,178	21,104

In 1907-8 there were 1370 parcels received and 501 despatched; in 1908-9, 1566 were received and 467 despatched; and in 1909-10, 1351 were received and 379 despatched.

The following table shews the number, tonnage, and nationality of vessels cleared at ports during the years 1905-6 to 1909-10:—

SHIPPING—FOREIGN-GOING VESSELS CLEARED AT PORTS OF PAPUA, 1905-6 to 1909-10.

Nationality.	Vessels.									
	Number.					Tonnage.				
	1905-6	1906-7.	1907-8.	1908-9.	1909-10	1905-6.	1906-7.	1907-8.	1908-9.	1909-10
British...	207	217	243	233	234	40,503	106,561	127,108	119,252	123,402
German	16	16	20	18	18	64,480	52,616	56,664	50,574	62,976
Dutch	...	...	...	18	24	...	...	...	54,396	69,908
Total...	223	233	263	269	276	104,983	159,177	183,772	224,222	256,286

§ 7. Land Tenure.

1. **Method of Obtaining Land.**—(i.) *The Land Laws.* The broad principles upon which the land laws of Papua are based are:—(*a*) No land can be alienated in fee simple; (*b*) the rental of the land leased is assessed on the unimproved value of the land, and is subject to reassessment at fixed periods.

(ii.) *Agricultural Lands (Class A).* The terms upon which the land may be leased are exceedingly easy to the settler. He can obtain a leasehold of the best class of agricultural land for any period up to ninety-nine years on the following conditions:—

(*a*) Upon making application a small deposit fee, ranging from £1 for 100 acres or less, to £5 for 1000 acres, and £5 for every additional 1000 acres or portion thereof, is payable. This is returned to the applicant when, having accepted the lease, he has cultivated a portion of the land.

(*b*) No survey fees are charged to the lessee, and no fee is charged for the preparation or registration of the lease.

(*c*) If the lease is for not more than thirty years, rent shall be paid during the whole term at the rate of 5 per cent. per annum on the unimproved value of the land.

(*d*) If the lease is for more than thirty years the rent payable is determined at 5 per cent. per annum of the unimproved value of the land, but no rent is payable for the first period of ten years.

(*e*) The unimproved value of the land is to be appraised every twenty years during the currency of the lease, and the rent determined accordingly, but if on any appraisement the rent is raised by more than one-third, the lessee may disclaim the lease, and is thereupon entitled to receive compensation for his improvements.

The compulsory improvement conditions attached to agricultural leases are as follows:—

(*a*) One-fifth must be properly planted with some approved plants within five years.

(*b*) Two-fifths within ten years.

(*c*) Three-fourths within twenty years.

(*d*) During the remainder of the term three-fourths of the suitable land must be kept properly planted.

Provided always that, if at any time during the first five years of a lease it appears to the Land Board that reasonable efforts are not being made to fulfil the improvement conditions, they may recommend the Lieutenant-Governor to cancel the lease, and thereupon it shall be lawful for the Lieutenant-Governor, by notice in the *Gazette*, to cancel the lease accordingly.

All agricultural lands which have not been alienated by the Crown have been assessed under Section 13 of the Land Ordinance at an unimproved value of 5s. per acre. This appraisement definitely fixes all land rentals for agricultural lands for twenty years as follows:—First ten years, free; second ten years, 3d. per acre per annum.

The rental of agricultural leases for the whole term of ninety-nine years cannot exceed the following amounts, subject to the clause *re* voluntary forfeiture and compensation:—First twenty years—first ten years, *nil*, second ten years, 3d. per acre; second twenty years, 4d. per acre; third twenty years, 5½d.; fourth twenty years, 7½d.; balance of lease, 9$\frac{3}{7}$d.

(iii.) *Pastoral Lands (Class B).* Pastoral land, suitable for cattle and horses, can be obtained in easily accessible positions. All these lands are well watered and clothed with blady kangaroo, crowsfoot, couch, scurvy, and other grasses. The carrying capabilities of this land are estimated at forty head of cattle to the square mile. Application, deposits, fees, etc., are similar to those for Class A.

The compulsory improvement conditions attached to pastoral leases are:—

(*a*) Ten head of cattle, horses, asses, mules, or fifty head of sheep, per square mile must be on the land within five years.

(*b*) Within ten years these numbers must be increased to twenty head of cattle or 100 sheep or goats to the square mile.

(*c*) The land must be kept stocked to this extent for the remainder of the lease.

Provision for forfeiture of lease is the same as in the case of agricultural lands.

The rentals of pastoral leases for the whole term of ninety-nine years cannot exceed the following amounts, subject to the clause *re* voluntary forfeiture and compensation:—First twenty years—first ten years, *nil*, second ten years, 1s. per 100 acres; second twenty years, 3s. 1½d. per 100 acres; and increasing by one-third for every succeeding twenty-year period.

2. **Land Tenures.**—On 30th June, 1910, the lands of the territory were held as follows:—

	Acres.
Area of land held by the natives	56,541,838
Area of Crown land	1,013,790
Area of freehold land	26,547
Area of leasehold land	363,425
Area of territory	57,945,600

Since the operation of the Papua Act, private sales of land in the territory have practically ceased. The Government buys from the natives, and then leases to planters, who are forbidden to have direct dealings in land with Papuans. The development in leasehold tenures may be seen from the following table:—

TOTAL AREA HELD UNDER LEASE, 1905-6 to 1909-10.

Year ended 30th June.	1906.	1907.	1908.	1909.	1910.
Land held under lease ... acres	2,089	48,002	242,395	337,803	363,425

SECTION XXX.

PUBLIC HYGIENE.

§ 1. Introduction.

1. **General.**—Though the safeguarding of the public health as an organised department of administration is of comparatively modern growth, few branches of law have expanded more rapidly than the law relating to public health. The loss of potential wealth incurred through preventable diseases and deaths is of grave concern to the nation, and is a matter which has recently received an increased amount of attention both from the Commonwealth and State Governments and from the Health and other authorities in Australia. Numerous Acts of Parliament have been passed dealing with various aspects of the subject of public hygiene.

2. **State Legislation.**—In the first place there is a number of statutes, passed by the State Legislatures, such as Public Health Acts, Pure Food Acts, and Milk and Dairy Supervision Acts, providing, *inter alia*, for the constitution of Central Health Authorities, vested with definite powers, and furnishing the machinery necessary to enforce these powers. The general effect of this legislation has been to place local sanitary regulations and the execution of the Acts in the hands of the local authorities, subject to a general superintendence by a Government department.

3. **Commonwealth Legislation.**—Secondly, by the enactment of the Commerce (Trade Descriptions) Act 1905 and the Quarantine Act 1908, the Commonwealth Government has taken the first steps towards the exercise of its constitutional powers for the protection of the public health. Both these Acts are administered by the Department of Trade and Customs.

4. **Scope of Enquiry.**—In addition to the statutes already referred to, account should be taken of a large body of legislation which relates more or less indirectly to the subject of public hygiene. It deals with a great variety of subjects and matters, such as factories, conditions of employment, mines, merchant shipping, prevention of fire, buildings, dangerous performances, contagious diseases, and other matters. There is also a number of statutes which have been passed with the object of protecting and supervising infant life. Owing to exigencies of space it is not possible in this section to do more than give a brief description of the scope and results of the legislation relating to public hygiene in its more important aspects.

§ 2. The Public Health Acts.

1. **General.**—The most important statutes relating generally to the subject of public hygiene are the Health Acts which have been passed in each State. While the scope of these Acts differs considerably in some of the States, there is a general similarity in their chief provisions and range of operation. The administration of the Acts is generally carried on by a Central Board of Health under Ministerial control, while their actual execution is imposed on local Boards of Health or on the local authorities constituted

under the various Local Government Acts. Ordinarily the Central Board has general supervisory powers over local Boards and authorities, and also has power to act in case of default by a local Board or authority as to any duty under the Act, and to recover all expenses incurred. The Central Board may also make regulations, and the central and local Boards may make by-laws for various purposes generally specified in the Health Acts. Generally it may be said that the chief functions of the Central Health Authorities are:—(*a*) the collection and dissemination of useful information relating to health and the prevention of disease, and (*b*) to control, stimulate, and, where necessary, to supplement the efforts of the local authorities.

Inspectors are sent to make reports on the hygienic conditions of country towns or districts with a view to assisting the local authorities with advice, and keeping the central department posted as to the activity or otherwise of these various bodies.

Rating powers for sanitary purposes are conferred on local authorities by the Local Government Acts.

The general powers of local authorities under the Acts extend to a variety of subjects and matters, including—sewers and drains, sanitary conveniences, scavenging, cleansing, privies and cesspools, abatement of nuisances generally, offensive trades, public buildings, dwelling-houses and lodging-houses, hospitals, mortuaries, cemeteries and burial grounds, prevention of adulteration of food and drugs, unsound food, pollution of water, supervision of abattoirs and dairies, prevention of infectious diseases, and infant life protection.

2. **New South Wales.**—The Department of Public Health consists of a Permanent Head, Board and Secretary, together with the various staffs—medical, chemical and clerical; in addition there are five sanitary inspectors working under the medical officers of health and the chief sanitary inspector. The business carried on by the Department embraces public health and the general medical work of the Government. The Board is nominee; it was created in 1881, incorporated in 1894, and is charged with the administration of the following Acts:—Public Health Act 1902, Public Health (Nightsoil Removal) Act 1902, Dairies' Supervision Act 1901, Noxious Trades Act 1902, Cattle Slaughtering and Diseased Animals and Meat Act 1902, Sydney Abattoirs, etc., Act 1902, Quarantine Act 1897, Pure Food Act 1908, and Private Hospitals Act 1908. The Board also possesses advisory powers under the Local Government Act 1906.

3. **Victoria.**—In this State the Public Health Acts are administered by a Board composed of two members nominated by the Governor-in-Council and of seven members elected by the municipal councils. The medical and sanitary staffs of the Board consist of (*a*) the medical inspector, who is also chairman, (*b*) two assistant medical inspectors, (*c*) five port health officers, (*d*) five engineering inspectors, (*e*) one sanitary inspector, and (*f*) nine food inspectors. The main function of the Board is to enforce the execution of the Health Acts by the local municipalities, but it has been found advisable to supplement this supervisory function by an active policy of inspections as to the sanitary condition of various districts and the sampling of articles of food. The supervision of the sanitary condition of the milk supply is under the Dairy Supervision Branch of the Department of Agriculture. Acts administered by the Department of Public Health are:—The Health Act 1890, the Cemeteries Act 1890, the Cremation Act 1903, the Adulteration of Wine Act 1905, the Meat Supervision Acts 1900 and 1909, and the Pure Food Act 1905.

4. **Queensland.**—In this State a Department of Public Health was organised in 1901 under the authority of the Health Act 1900. Prior to that time a central authority —the Board of Health—existed, but was without legal power, and the responsibility of sanitary administration was thrown upon the local authorities. The Act of 1900 consolidated and amended prior health legislation and provided for the appointment of a Commissioner of Public Health, charged, under the Home Secretary, with the administration of the Act. The chief functions of the central authority are to advise and stimulate the local authorities on matters pertaining to the Act, and also, where neces-

sary, to compel the remedying of sanitary evils produced by local inefficiency or apathy. The production and sale of milk and the manufacture, sale, and export of dairy produce, in their hygienic aspects, are controlled by the Department of Agriculture and Stock under the Dairy Produce Acts 1904, 1905, and 1910.

5. **South Australia.**—The Central Board of Health in South Australia consists of five members, three of whom (including the chairman) are appointed by the Governor, while one each is elected by the city and suburban local Boards and the country local Boards. The Health Act 1898 provides that the municipal and district councils are to act as local Boards of Health for their respective districts. There are 175 of these local Boards under the general control and supervision of the Central Board. A chief inspector periodically visits the local districts and sees generally that the Boards are carrying out their duties. There is also a chief inspector of food and drugs (under the Food and Drugs Act 1908), and a chief inspector of cattle, and there are nine other inspectors in outlying districts who are directly responsible to the Central Board.

6. **Western Australia.**—The Health Act 1898, which has been amended by Acts passed in 1900, 1902, 1904, 1906, and 1909, provides for administration on the following lines:—The principal authority (under the Minister) is the Central Board of Health, consisting of five nominee members, and has general supervisory powers, including the approval of all appointments of officers, and confirmation of all by-laws made by local Boards, and supervision of finances. Within municipal districts, local administration is in the hands of the municipal councils, which act as local Boards of Health; while for districts outside municipalities local Boards may be appointed by the Governor. The control of dairies and dairy herds and of food supply are both functions of the health authorities under the Health Acts. An Amending and Consolidating Health Bill was introduced into Parliament in 1909, but has not yet been passed.

7. **Tasmania.**—In this State a Department of Public Health, under the control of a chief medical officer, was constituted by the Public Health Act 1903. The department has one inspector, but district health officers are not provided for. The number of local authorities under the Public Health Act has been reduced to fifty-one since the Local Government Act 1906 came into force. All parts of Tasmania are now furnished with the administrative machinery for local sanitary government.

§ 3. Inspection and Sale of Food and Drugs.

1. **Introduction.**—The importance of securing a pure and wholesome supply of food and drugs is recognised by both the Commonwealth and State Parliaments. Under the Acts referred to later, and the regulations made thereunder, the importation of articles used for food or drink, of medicines, and of other goods enumerated, is prohibited, as also is the export of certain specified articles, unless there is applied to the goods a "trade description" in accordance with the Act. Provision is made for the inspection of all prescribed goods which are imported, or which are entered for export.

(i.) *Commonwealth Jurisdiction.* Under Section 51 (i.) of the Commonwealth Constitution Act 1900, the Commonwealth Parliament has power to make laws with respect to trade and commerce with other countries and among the States. By virtue of that power, the Commerce (Trade Descriptions) Act, to which reference has already been made in another part of this book (see page 609), was passed in 1905.

(ii.) *State Jurisdiction.* The inspection and sale of food and drugs is also dealt with in each State either under the Health Acts or under Pure Food Acts. There is, in addition, in the several States, a number of Acts dealing with special matters, such as the adulteration of wine and the supervision of meat. The sanitary condition of the milk supply is also subject to special regulations or to the provisions of special Acts; this subject is more particularly referred to in the next succeeding sub-section hereof.

(*a*) *General Objects of Acts.* The general objects of the Acts dealing with the inspection and sale of food and drugs are to secure the wholesomeness, cleanliness, and freedom from contamination or adulteration of any food, drug, or article, and for securing the cleanliness of receptacles, places, and vehicles used for their manufacture, storage, or carriage. The sale of any article of food or any drug which is adulterated or falsely described is prohibited, as also are the mixing or selling of food or drugs so as to be injurious to health.

(*b*) *Inspection and Analysis.* Power is given to any authorised officer to enter any place for the purpose of inspecting any article intended to be used as a food or drug and also to inspect articles being conveyed through the streets, by water or by rail. He may take samples for examination or analysis, and may seize for destruction articles which are injurious to health or unwholesome. Chemical analyses and bacteriological examinations are made by qualified officers. Special provision is generally made in the Acts with regard to the sale of preservatives and disinfectants.

(*b*) *Advisory Committees.* In New South Wales, Victoria, and South Australia Advisory Committees have been appointed for the purpose of prescribing food standards and for making recommendations generally with a view to carrying out the provisions of the Acts. The duty of enforcing these regulations is entrusted to the local authorities, but it is stated that up to the present comparatively few of the local councils seem to have realised the importance of guarding the food supplies of the people.

2. **New South Wales.**—Provisions as to the sale of food and drugs in New South Wales are contained in the Pure Food Act 1908 and in the regulations made thereunder. The administration and enforcement of these provisions are primarily duties of the Board of Health, but may, by direction of the Governor, be left to local authorities. Analyses are made by the Department of Public Health free of charge.

(i.) *Special Provisions.* The Act contains a number of special provisions. Drugs must comply with tests specified in the British Pharmacopœia, and packages of food must be labelled with description, weight, or measure of their contents. The advertising or sale of any injurious or useless food, drug, or appliance may be prohibited, as also may the sale of any substance as a disinfectant or preservative. A person selling prohibited articles may not be liable to penalties under the Act if he prove that he purchased such articles with a guarantee in writing that they were not adulterated or falsely described, that he had no reason to believe that the same were adulturated or falsely described, and that he sold them in the same state as when he purchased them. The person giving the guarantee must be a resident in New South Wales, or, if a company, must have a registered office in New South Wales. The Board of Health may require the council of any local authority to submit for analysis during each year not less than three samples of foods or drugs for each thousand persons of the population of its area.

(ii.) *The Advisory Committee.* The Pure Food Act 1908 provides for the constitution of an Advisory Committee on whose recommendation the Board of Public Health may make regulations prescribing food standards, prohibiting the manufacture or sale of food, or the use or appliances containing any specified substances, and for generally carrying out the purposes of the Act.

3. **Victoria.**—In this State the prevention of the adulteration of food and of the sale of unwholesome food are provided for by the Health Act 1890, as amended by the Adulteration of Wine Act 1900 and the Pure Food Act 1905 and regulations made thereunder. While differing considerably in detail, the general provisions of these Acts are in many respects similar to those of the New South Wales Act of 1908. The Meat Supervision Acts 1900 and 1909 specially deal with the supervision of the slaughtering of animals and the sale of meat in Victoria. The Pure Food Act provides, *inter alia*, for the establishment of a specially qualified Foods Standard Committee charged with the

functions of formulating standards of purity, quality, and composition for articles of food and drugs. Various regulations as to both food and drugs have been made by this Committee. The Act requires explicit labelling of packages, and provides for the punishment, where possible, of the actual adulterator. The retail vendor is not penalised if it is clear that he has no guilty knowledge, and that he has taken reasonable precautions against committing an offence. A warranty or invoice may be available as a defence to any proceedings under the Acts, but if given by a person resident outside the State the defendant must prove that he had taken reasonable grounds to ascertain and did in fact believe in the accuracy of the statements contained in the warranty or invoice.

4. **Queensland.**—By Part VI. of the Health Act 1900 and by regulations made thereunder, provision is made for the inspection of food, and for the supervision of the sale of food and drugs by local authorities. The inspection and examination of food stuffs has, however, been almost entirely undertaken by the Department of Public Health, and it appears that very few of the local authorities make any attempt to carry into execution the provisions of the Health Act relating to food. Considerable activity was shewn by the Department during the year 1908-9 in carrying out a pure-food crusade, both in Brisbane and in provincial towns. Seventy prosecutions were carried through the courts in accordance with the food sections of the Act of 1900, and in sixty-three cases, fines were inflicted. During the year 1909-10 thirty-five prosecutions were undertaken and fines were imposed in thirty-three cases. In any prosecution for selling adulterated food or drugs no person may be convicted if he prove that he did not know of the adulteration, and that he could not, with reasonable diligence, have obtained that knowledge. It is also open to a defendant to prove that he purchased the goods with a written warranty from some responsible person carrying on business in Queensland.

5. **South Australia.**—The inspection and sale of food and drugs is now chiefly contained in the Food and Drugs Act 1908, and in the regulations made thereunder; certain special matters, such as water and meat supplies, are dealt with in Part VII. of the Health Act 1898. An important provision of the Food and Drugs Act is the constitution of the metropolitan area as a single district, so that the sale of food and drugs generally, as well as the inspection and supervision of dairy premises and cattle in the metropolis, is under the control of one central body—the Metropolitan County Board. Another important provision of the Food and Drugs Act is the appointment of an Advisory Committee to fix standards of foods and drugs, and to draw up necessary regulations. In addition to dealing with the supervision of the milk supply and dairies, the Act provides for the inspection and analysis of foods, drugs, chemicals, spirituous liquors, patent medicines, and proprietary articles, for the inspection and examination of all animals offered for sale or slaughter, and for the licensing of ice cream and aërated waters manufacturers. A warranty given by a person resident in South Australia is available as a defence to any proceeding under the Act, if the defendant prove that he bought the article in the same state as sold. Proof of absence of knowledge of adulteration is a sufficient defence if the defendant could not by analysis or other adequate test have obtained that knowledge.

6. **Western Australia.**—The adulteration of food and unwholesome food are dealt with under Part IV. of the Health Act 1898, the provisions of which, with regard to food control, are based on those of the English Health Act of 1875. Each local Board may be required to appoint its own analyst, but in many of the more remote country districts this is not insisted upon. Within municipal districts it is stated there is a fairly systematic inspection of various articles of food, while the samples submitted for analysis consist chiefly of milk. It is found that the effective supervision of imported tinned meats demands constant attention. Inspection of alcoholic beverages is carried out by spirit inspectors appointed under the Licensing Acts.

7. **Tasmania.**—Though provision exists under the Public Health Act 1903 for the inspection and supervision of food and drugs, it would appear that no systematic attempt at enforcement of food purity is made in Tasmania. The existing statutory powers leave these matters wholly in the hands of local authorities. The Department of Public Health has no power to take samples for examination or analysis. In any action under the Act a defendant must be discharged if he prove absence of knowledge or that he bought the article in the same state as sold, and with a warranty. A Bill to provide for the regulation of the sale of food and drugs was introduced in the Tasmanian Parliament in July, 1910.

8. **Food and Drug Standardisation.**—With the object of securing uniformity of food and drug standards of the principal manufactured products sold in the Commonwealth, a conference, which was attended by representatives of the Commonwealth and all the individual States except Western Australia, was opened in Sydney on 8th June, 1910. The result of this conference was that several adoptions of standards of food and drugs, and labelling of articles for consumption were made, so as to obtain uniformity in the several States. The recommendations of the conference deal with a variety of matters and are too lengthy for inclusion in this publication. Among the most important may be mentioned the following:—(*a*) The addition to articles of food of preservative substances, being other than common salt, sugar, spice, wood-smoke, vinegar, and acetic acid, should be prohibited as far as possible, and should be permitted only in minimum proportions. (*b*) The addition to any form of milk of any preservative (except sugar) should be prohibited. (*c*) The addition of foreign or artificial colourings or flavourings should be avoided as far as possible, and when permitted should be declared.

§ 4. Milk Supply and Dairy Supervision.

1. **Introduction.**—Milk is pre-eminently the food which needs most careful protection at each successive stage of its production, carriage, storage, and delivery, from exposure to infection from extraneous matter. The problem of obtaining a pure and clean milk supply has accordingly, during the last few years, demanded an increasing amount of attention from the Health authorities, and in each State special laws and regulations have been passed governing the supervision of dairy farms and dairies.

(i.) *General Provisions of Acts and Regulations.* In general, it may be said that it is not lawful to sell or offer for sale any milk which is not fresh or wholesome, or which has been watered, adulterated, reduced, or changed in any respect by the addition of water or any other substance, or by the removal of cream. Regulations made under the Acts provide for the carrying-on of dairy farms, dairies, factories, and creameries, under proper and wholesome conditions; and supervisors and inspectors are appointed to enforce these provisions. Generally, the execution and enforcement of the Acts is left to the local authorities.

(ii.) *Registration of Dairymen and Milk Vendors.* Dairymen, milk vendors, and dairy-factory or creamery proprietors are required, under penalty, to be registered. In some States registrations must be applied for before commencing to trade; in other States they must be applied for within a specified time after the premises are first used.

(iii.) *Inspection of Premises.* Dairy inspectors employed by the central department traverse the principal dairying districts, and inspect dairy premises, dairy herds, appliances, and utensils, and ascertain in what fashion the various local authorities carry out the duties imposed on them. Regulations and instructions are issued by the central departments for the information and guidance of local authorities, dairymen, milk vendors, and others, as to precautions to be observed in order to protect milk from contamination, and to ensure cleanliness as to the structural arrangements, dimensions

and ventilation of premises, and as to the care and health of dairy cattle. If an inspector is satisfied that any premises or apparatus used therein are unclean, or unfit for the purposes of dairy produce, he may require the owner to put the same in a proper and wholesome condition.

(iv.) *Notification of Diseases.* Every dairyman or milk vendor is required to report immediately any case of certain prescribed infectious diseases occurring in any human being engaged at or residing on his premises. It is the duty of the local authority to take care that communication between all persons belonging to the infected household and the milk business in all its details is prevented. Cases of notifiable diseases occurring in animals at a dairy farm or dairy must also be reported immediately, and the owner must at once isolate the diseased animal. The sale of milk from an infected cow is prohibited, and, under certain circumstances, an inspector may order an infected animal to be branded or destroyed.

(v.) *Analysis of Dairy Produce.* The local authority generally has power to enter premises and to take away samples of the milk, cream, butter, or cheese there found, and of the water supply therein, for the purpose of examination or analysis.

2. **Number of Dairy Premises Registered.**—The following table shews the number of dairy premises registered and the number of cattle thereon in each State during the year 1909-10:—

NUMBER OF DAIRY PREMISES REGISTERED AND CATTLE THEREON, 1909-10.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.
Premises registered ...	17,275†	11,581	10,275	244	282†	*
Cattle thereon	845,436†	97,623	253,294	2,137	4,525†	*

* Not available. † Figures are for year 1908-9.

3. **New South Wales.**—The provisions of the Dairies Supervision Act 1901 extend to the whole of the Eastern Division of this State and to all important dairying districts further inland. Other districts are brought under the operation of the Act by proclamation from time to time. Every dairyman, milk vendor, and dairy factory or creamery proprietor is required, under penalty, to apply for registration to the local authority for the district in which he resides, and also to the local authority of every other district in which he trades. Registrations must be applied for before commencing to trade and must be renewed annually.

4. **Victoria.**—The inspection and supervision in Victoria of dairies, dairy farms, dairy produce, milk stores, milk shops, milk vessels, dairy cattle, and grazing grounds are provided for by the Milk and Dairy Supervision Act 1905, administered by the Minister of Agriculture. Under the Health Act 1890 and the Pure Food Act 1905, however, the Department of Public Health is empowered to take samples of food (including milk, cream, butter, cheese, and other dairy products) for examination or analysis, and to institute prosecutions in case of adulterated or unwholesome food. By the end of the year 1909, eighty-seven municipal districts, comprising about one-sixth of the area of the State, had been brought under the operation of the Milk and Dairy Supervision Act. The municipal councils have the option of carrying out the execution of the Act themselves or of electing for execution by the Department of Agriculture; up to the present all the municipalities in which the Act has been proclaimed have elected for Departmental execution.

The following tables give particulars of dairy farms and dairies, their acreage, the acreage under cultivation, and the number of cows at the end of the year 1910:—

VICTORIA.—PARTICULARS OF DAIRY FARMS AND DAIRIES, 1910.

Particulars.	Dairy Farms.	Dairies.	Acreage.		Number of Cows.	Total License Fees received in 1910.
			Cultivated.	Total.		
			Acres.	Acres.		£
Number ...	9,163	2,418	275,994	10,480,432	97,623	4,804

5. **Queensland.**—The control and supervision of the milk supply and of dairies and the manufacture, sale, and export of dairy produce in Queensland are provided for by the Dairy Produce Acts 1904 and 1905, administered by the Department of Agriculture and Stock. These Acts and the regulations made thereunder apply only to prescribed districts, which comprise the whole of the coastal district from Rockhampton down to the New South Wales border and the Darling Downs, Maranoa, and Cairns districts.

6. **South Australia.**—The licensing and registration of dairies, milk stores, and milk shops, and the licensing of milk vendors are now provided for by the Food and Drugs Act 1908, which came into force on the 1st June, 1909. Regulations for registration under this Act were in course of preparation in April, 1910, and it is understood that in many cases the local authorities have held over registration pending the issue of such regulations. Reference has already been made (see § 3, 5 hereof) to the constitution of the Metropolitan County Board.

7. **Western Australia.**—In this State the inspection of dairy herds is under the control of the Department of Agriculture, while the supervision of dairy premises and of subsequent stages in the milk supply is carried out by the Health authorities. At the commencement of the year 1908 a campaign was instituted towards the elimination from dairy herds of tubercular cattle. This campaign took the form of the application to all the animals in each herd of the tuberculin tests and the isolation and slaughter of all re-acting animals.

8. **Tasmania.**—Under the Public Health Act 1903 it is the duty of local authorities to regulate the hygienic conditions of milk production and milk supply, and regulations dealing with milk, cream, and butter standards have been prescribed. Comprehensive by-laws for the registration and regulation of dairymen's premises exist in many districts, but outside the cities and a few towns it would appear that these are seldom enforced.

§ 5. Prevention of Infectious and Contagious Diseases.

1. **General.**—The provisions of the various Acts as to precautions against the spread and the compulsory notification of infectious diseases may be conveniently dealt with under the headings—(*a*) Quarantine; (*b*) Notifiable Diseases; and (*c*) Vaccination.

2. **Quarantine.**[1]—Under the Commonwealth Quarantine Act 1908, the systems of State quarantine formerly in operation were abolished, and a branch of the Department of Trade and Customs, under the immediate control of a Director of Quarantine, was created on 1st July, 1909. As far as is at present practicable uniformity of procedure has been established throughout the Commonwealth in respect of all vessels, persons, and goods arriving from oversea ports or proceeding from one State to another,

1. From information furnished by W. P. Norris, Esq., M.D., D.P.H., Federal Director of Quarantine.

and in respect of all animals and plants brought from any place outside Australia. In regard to interstate movements of animals and plants, the Act becomes operative only if the Governor-General be of opinion that Federal action is necessary for the protection of any State or States; in the meantime the administration of interstate quarantine of animals and plants is left in the hands of the States.

(i.) *Transfer of Quarantine Stations.* The transfer from the States to the Commonwealth of the quarantine stations, for the purposes of human quarantine, at the following places has been effected:—(*a*) *New South Wales.* North Head (near Sydney). (*b*) *Victoria.* Point Nepean (near Melbourne). (*c*) *Queensland.* Magnetic Island (near Townsville), and Thursday Island. (*d*) *South Australia.* Torrens Island (near Adelaide). (*e*) *Western Australia.* Woodman's Point (near Fremantle), Albany, and Broome. Animal quarantine stations in each of the States have also been transferred, and steps are being taken for the taking over by the Commonwealth of other stations. New buildings and improvements are in course of construction at several of the transferred stations.

(ii.) *Co-operation of Federal and State Authorities.* In order to secure co-operation between the Commonwealth and State authorities, and with the further object of economical administration, arrangements were, in 1909, made under which the chief medical officer of each State Health Department acts as the Chief Quarantine Officer in his State, and officers hitherto performing quarantine duties under the State Acts became Federal quarantine officers, payment for their services being made through the State Governments. Arrangements were also made for the administration of the Act and regulations relating to oversea animal and plant inspection and quarantine, to be carried out by officers of the States Agricultural Departments. Power to take action for the prevention of the spread of disease within a State still remains in the hands of the State, and as the functions of the Commonwealth and States may be exercised at the same time, the advantage of co-operation is apparent.

(iii.) *Chief Provisions of Act.* The Act provides for the inspection of all vessels from oversea, for the quarantine, isolation, or continued surveillance of infected or suspected vessels, persons, and goods, and for the quarantining and, if considered necessary, the destruction of imported goods, animals, and plants. The obligations of masters, owners, and medical officers of vessels are defined, and penalties for breaches of the law are prescribed. Power is given to the Governor-General to take action in regard to various matters by proclamation, and to make regulations to give effect to the provisions of the Act. Quarantinable diseases are defined as small-pox, plague, cholera, yellow fever, typhus fever, or leprosy, or any other disease declared by the Governor-General, by proclamation, to be quarantinable. "Disease" in relation to animals means certain specified diseases, or "any disease declared by the Governor-General by proclamation to be a disease affecting animals." "Disease" in relation to plants means "any disease or pest declared by the Governor-General by proclamation to be a disease affecting plants." The term "plants" is defined as meaning "trees or plants, and includes cuttings and slips of trees and plants and all live parts of trees or plants and fruit."

(iv.) *Proclamations.* The proclamations so far issued specify the diseases to be regarded as diseases affecting animals and plants; appoint first ports of landing for imported animals and plants and first ports of entry for oversea vessels; declare certain places beyond Australia to be places infected, or as places to be regarded as infected with plague; prohibit the importation (*a*) of certain noxious insects, pests, diseases, germs, or agents, (*b*) of certain goods likely to act as fomites, and (*c*) of certain animals and plants from any or from certain parts of the world; and fix the quarantine lines in certain ports of Australia.

(v.) *Regulations.* Regulations have been made prescribing the quarantine signal; the hours of clearance of vessels; forms of notices, orders, reports, and bonds to be used by masters, medical officers, quarantine officers, and importers; the period of detention of vaccinated and unvaccinated persons in quarantine; the conditions of removal of

goods and mails; the method of disinfection of persons, animals, and infected or suspected articles; the conditions under which certain animals not prohibited may be imported; the sustenance charges for quarantine animals; the conditions of importation of hides, skins, wool, hair, bones, and animal manure; the method of carrying out the quarantining, disinfection, fumigation, and treatment of plants and packages, Regulations have also been made with the object of preventing the ingress to and the egress from vessels of rats and mice, and for the destruction of rats, mice, and other vermin.

(vi.) *General.* The procedure has already been greatly simplified. Instead of all oversea vessels being examined in every State, as was formerly the case, those arriving from the south and west are now examined only at the first port of call and pratique is given for the whole of the Commonwealth, except in cases of suspicious circumstances, while vessels arriving from the northern routes are examined only at the first and last ports. It is expected that the restrictions placed upon oversea vessels will be further removed as the machinery of quarantine is improved. The present freedom from certain diseases which are endemic in other parts of the world, would, however, appear to justify the Commonwealth in adopting precautionary measures not perhaps warranted in the already infected countries of the old world.

3. **Notifiable Diseases.**—Provision exists in the Health Acts of all the States for precautions against the spread and for the compulsory notification of infectious diseases. When any such disease occurs the fact must be notified to the medical officer of health of the district. The duty of giving this notification is generally imposed, first on the head of the house to which the patient belongs, failing whom on the nearest relative present, and on his default on the person in charge of or in attendance on the patient, and on his default on the occupier of the building. Any medical practitioner visiting the patient is also bound to give notice.

(i.) *Notifiable Diseases Prescribed in each State.* In the following statement those diseases which are notifiable in each State are indicated by a cross:—

DISEASES NOTIFIABLE UNDER THE HEALTH ACTS IN EACH STATE, 1911.

Particulars.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.
Anthrax	...	...	...	+	...	...
Ankylostomiasis	...	...	+	...	...	...
Beri-beri	...	...	...	...	+	...
Bubonic plague	+	+	+	+	+	+
Cerebro-spinal meningitis	...	...	+	+	...	...
Cholera	+	+	+	+	+	+
Continued fever	...	...	+	...	+	...
Diphtheria	+	+	+	+	+	+
Enteric fever	...	+	+	+	+	+
Erysipelas	...	...	+	+	+	...
Leprosy	+	+	+*	+	+	+
Malarial fever	...	...	+	...	...	...
Measles	...	...	+	...	...	...
Membranous croup	...	...	+	+	+	...
Poliomyelitis anterior acuta	...	...	+	...	...	...
Puerperal fever	...	...	+	+	+	+
Pulmonary tuberculosis(phthisis)	...	+	+	+	+	+
Relapsing fever	...	...	+	+	+	...
Scarlet fever	+	+	+	+	+	+
Scarlatina	...	...	+	+	...	...
Small-pox	+	+	+	+	+	+
Trichinosis	...	...	...	+	...	...
Typhoid	+	+	+	+	+	+
Whooping cough	...	...	...	+	...	...
Yellow fever	...	+	...	+	+	+

* Under the Leprosy Act 1892.

(ii.) *Duties of Authorities.* As a rule the local authorities are required to report from time to time to the Central Board of Health in each State as to the health, cleanliness, and general sanitary state of their several districts, and must report the appearance of certain diseases. Regulations are prescribed for the disinfection and cleansing of premises, and for the disinfection and destruction of bedding, clothing, or other articles which have been exposed to infection. Bacteriological examinations for the detection of plague, diphtheria, tuberculosis, typhoid, and other infectious diseases within the meaning of the Health Acts are continually being carried out. Regulations are provided in most of the States for the treatment and custody of persons suffering from certain dangerous infectious diseases, such as small-pox and leprosy.

(iii.) *New South Wales.* The proclamation and notification of infectious diseases is dealt with in Part III. of the Public Health Act 1902. Special provision is made by that Act for the notification of small-pox and leprosy, and for the custody and treatment of lepers. Many improvements have been effected by the Sydney Harbour Trust (see Section XXVI. hereof; page 997) with a view to generally improving the hygienic condition of the area under its control, and especially with the object of preventing the introduction of bubonic plague. Special reports dealing with the ætiology of outbreaks of plague have been published.

(iv.) *Victoria.* Under Part VIII. of the Public Health Act 1890, the notification of small-pox, cholera, plague, yellow fever, and other prescribed malignant, infectious, or contagious diseases is compulsory. An amending Act, passed in 1907, requires medical practitioners and registrars to report all cases of notifiable diseases coming under their notice in any proclaimed district, and not merely those cases which occur in the district in which the practitioner or registrar is resident.

(v.) *Queensland.* Under Part VII. of the Health Act 1900, all cases of infectious diseases must be notified; special provision is made for notification of cases of phthisis and small-pox. A report on plague in Queensland for a period covering eight successive years—1900 to 1907—has been published by the Commissioner of Public Health. Apart from the statistical data collected and collated, the report deals exhaustively with the medical, preventive, administrative, and epidemiological aspects of the plague, as observed in Queensland. Plague hospitals are provided at Maryborough, Bundaberg, Gladstone, Mackay, Townsville, and Cairns. Provision is also made for the diagnosis of leprosy, and lepers are sent to Peel Island, Moreton Bay.

(vi.) *South Australia.* In this State cases of infectious diseases must be reported to the local Board, under the provisions of Part VIII. of the Health Act 1898. The onus of notification is placed primarily on the head of the family, and, failing him, the nearest relative, the person in charge, or the occupier of the house; in any case, notification must be given by the medical practitioner attending.

(vii.) *Western Australia.* Regulations made under the Health Act 1898 provide for the compulsory notification to local Boards of infectious diseases. The local Boards must report to the Central Board. The necessity for providing hospital treatment for infectious cases has been recognised by the Boards of Health, and in several instances wards for the treatment of these cases have been erected.

(viii.) *Tasmania.* Provisions regarding the prevention and notification of infectious diseases are contained in the Public Health Act 1903, as amended in 1908.

4. **Vaccination.**—In the State of New South Wales there is no statutory provision for compulsory vaccination, though such exists in all the other States of the Commonwealth. With the exception of Victoria, the Vaccination Acts are, however, not generally enforced. The following table shews, so far as particulars are available, the number of persons vaccinated in each State from 1901 to 1909 inclusive:—

NUMBER OF PERSONS VACCINATED IN EACH STATE, 1901 to 1909.

Year.	N.S.W.*	Victoria.	Q'land.†	S. Aust.	W. Aust.	Tasmania.
1901 ...	2,081	19,243	...	4,350	†	1,405
1902 ...	896	16,117	...	1,906	†	3,296
1903 ...	605	20,935	...	1,857	†	24,857
1904 ...	20	20,548	...	1,476	†	53
1905 ...	32	20,116	...	1,142	†	...
1906 ...	42	20,539	...	980	†	...
1907 ...	39	20,902	...	3,165	†	...
1908 ...	42	20,924	...	1,502	616‡	...
1909 ...	11	21,344	...	1,477	†	...

* By Goverment medical officers only. † Returns not available. ‡ Notifications of vaccinations to district registrars during year 1908-9.

The large increase in Tasmania in 1903 is accounted for by the small-pox epidemic which occurred in Launceston in that year.

(i.) *New South Wales.* Although there is no provision for compulsory vaccination in this State, public vaccinators have been appointed. A fee is paid, and free lymph is provided.

(ii.) *Victoria.* Compulsory vaccination is enforced throughout the State, under Part IX. of the Health Act 1890. From the year 1873 up to the present time it is estimated that 72 per cent. of the children whose births were registered have been vaccinated. Free lymph is provided.

(iii.) *Queensland.* Although compulsory vaccination is provided for in this State, under Part VII. of the Health Act 1900, only one remote district has been proclaimed under the Act.

(iv.) *South Australia.* The Vaccination Act 1882, which applies to South Australia and the Northern Territory, is enforced by the vaccination officer of the State and by the Police Department. Under this Act vaccination was compulsory, but in 1901 an Act to abolish compulsory vaccination was passed. This latter Act was subsequently amended, and the present law is that no parent is liable to any penalty if, within 12 months from the birth of the child, he makes a declaration that he conscientiously believes that vaccination would be prejudicial to the health of the child, and within seven days thereafter delivers the declaration to the vaccination officer. It is estimated that about 15 per cent. of the children born are vaccinated.

(v.) *Western Australia.* In this State vaccination is compulsory under the Vaccination Act 1878, which, however, remains almost a dead letter. All district medical officers are public vaccinators, but they receive no fee for vaccinations.

(vi.) *Tasmania.* All infants in Tasmania are nominally required, under the Vaccination Act 1898, to be vaccinated before the age of 12 months, unless either (*a*) a statutory declaration of conscientious objection is made, or (*b*) a medical certificate of unfitness is received. The Act is not enforced, and practically no vaccination of infants is performed in the State, or has been performed since the small-pox outbreak in Launceston in 1903, when 66 cases occurred with 19 deaths. It is estimated that 45,000 persons, or about one quarter of the present population, have been vaccinated.

§ 6. Filariasis and the Destruction of Mosquitoes.

1. **Introduction.**—The remarkable development of parasitology in recent years and the increase in knowledge of the part played by parasites in human and animal diseases have shewn that the difficulties in the way of tropical colonisation, in so far as these arise from the prevalence of diseases characteristic of tropical countries, are largely removable by preventive and remedial measures. Malaria and other tropical diseases are

coming more and more under control, and the improvements in hygiene, which science has accomplished, lend an entirely new aspect to the question of white settlement in countries formerly regarded as unsuitable for colonisation by European raćes. In Australia the most important aspect of this matter is at present in relation to such diseases as filariasis, malaria, and dengue fever, which, although practically unknown in the southern States, are of common occurrence in many of the tropical and sub-tropical parts of the Commonwealth. In Brisbane, for example, it is stated that during 1908 an examination was made of 200 patients who had been admitted consecutively to the general hospital, and it was found that 17 per cent. were suffering from filaria, though only a few of them had been brought in for treatment for that disease. It is also stated that an examination made in 1909 of 1000 patients admitted for all causes at the general hospital at Brisbane shewed that 13 per cent. of them were infected with filaria.

2. **Scope of Operations.**—In certain parts of Australia considerable benefit has already resulted from the adoption of methods of anti-malarial prophylaxis. The extermination of mosquitoes in their larval stage by drainage, screening and oiling of water supplies, and the isolation of infected persons, are some of the methods pursued with success. It would appear, however, that before any general comfort and freedom from house mosquitoes and from the diseases carried by these insects can result, a much wider crusade for the destruction of the mosquito, involving absolute co-operation and conscientiousness on the part of the community in the elimination of breeding places of mosquitoes, is necessary.* In many countries "Mosquito Brigades" have been organised, whose object is the killing of the mosquito and the removal, as far as possible, of the conditions favourable to the insects. In other countries the churches, medical societies, corporations, business organisations, factories, and schools have all taken part in organising lectures and spreading literature dealing with the mosquito.

3. **Queensland.**—The existence of filaria in Brisbane was first discovered about thirty years ago. Filariasis is now on the increase, and early in the year 1909 the Commissioner of Public Health for Queensland convened a conference of medical officers of health to the various local authorities to discuss the matter. A plan for combined action in mosquito destruction was the outcome, and it is stated that good results therefrom have already been noticed. Screening of domestic and other water tanks and destruction of larvæ by kerosene have been carried out in a number of places, while particular attention has been devoted to the draining of swamps within the metropolitan area. It may here be mentioned that an Institute of Tropical Medicine was inaugurated in January, 1910, at Townsville, under the control of an expert officer.

4. **South Australia.**—During the year 1907 malaria assumed such a serious form at the Government Smelting Works at Daly River, in the Northern Territory, that almost every employee was invalided to Palmerston for treatment. Early in 1908 preventive measures in the way of improved camp hygiene, treatment of swamps by petroleum, and the systematic use of quinine, were adopted, with the result that during that year no case of malaria appeared among the Government employees, although the natives and outsiders suffered as badly as before. The whole experiment cost under £5. Similar precautions have been adopted in other parts of the State.

5. **Other States.**—In Western Australia it is stated that malaria is not known to exist south of the 20th parallel, while filaria has not been discovered at all. No mosquito-borne diseases are known to exist in Victoria or Tasmania, and it is stated that filariasis is uncommon in New South Wales, the only cases known being imported ones. Kerosene and petroleum have been successfully used to destroy mosquitoes at various places in these States both by municipalities and private individuals.

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* See Report of the Commissioner of Public Health, Queensland, 1908-9, Appendix C., p. 17.

§ 7. Supervision of Infant Life.

1. **Introduction.**—It has been frequently stated in recent years that when the social, climatic, and industrial conditions are taken into consideration the infantile mortality of Australia, particularly in the large towns, is much higher than it should be. It is now generally recognised, however, that infant mortality is largely attributable to parental ignorance and neglect, and that, in particular, improper feeding is accountable for perhaps the majority of infant deaths. In all the States of the Commonwealth, Acts have been passed with the object of generally supervising the conditions of infant life and of reducing the rate of infantile mortality, and in many of the large towns measures have been adopted by private individuals to spread among the mothers a knowledge of the best methods of feeding and caring for their infants. Milk Institutes have also been established after the manner of the *Gouttes de Lait*[1] in Europe, with the object of reducing the number of deaths of infants from milk poisoning in the summer months. Reference has been made in a previous part of this book (see page 189) to the number of infantile deaths and the rates of infantile mortality in each State, and it will be convenient to here shew corresponding particulars for the year 1910, classified according to metropolitan and other districts in each State:—

INFANTILE DEATHS AND RATES OF INFANTILE MORTALITY FOR METROPOLITAN AND OTHER DISTRICTS, 1910.

Districts.	N.S.W.	Victoria.	Queensland.	S.A.	W.A.	Tasmania.	C'wealth.
NUMBER OF INFANTILE DEATHS.							
Metropolitan	1,384	1,236	325	376	234	136	3,691
Other ...	2,011	1,181	692	372	359	432	5,047
RATES OF INFANTILE MORTALITY.*							
Metropolitan	83.74	92.61	84.22	78.33	78.87	118.56	86.54
Other ...	69.54	65.28	56.21	64.36	77.74	97.42	68.06

* *i.e.*, the number of deaths of infants under one year of age per thousand births.

It may be seen that in each State the rates of mortality are higher in the metropolitan than in other districts. The causes of "preventable" deaths may generally be attributed to milk poisoning, want of knowledge on the part of mothers, inability to nurse, and lack of the necessary medical facilities.

The figures in the above table do not, however, completely represent the hygienic aspect of the question. For every infant death recorded there are probably three or four survivors who have sustained more or less serious permanent physical damage, quite apart from injuries at birth or congenital causes. It is stated that the far-reaching influence of the first year or two of life upon the whole subsequent physical welfare of the individual cannot be recognised too clearly, and it has been alleged that many serious defects and diseases occurring in later life may be credited to results ensuing from infantile disease. This is particularly the case in respect of digestive diseases.[2]

The conditions regulating the employment of boys and girls in shops and factories are referred to in the section of this book dealing with *Industrial Unionism and Indus-*

1. Organised action in this direction commenced in 1894 in Belgium. The original Belgian Society is known as the "*Société des Gouttes de Lait.*" The movement has become an international one, and branches of the Society have been founded all over Europe. Similar philanthropic work was commenced in the United States of America before 1894.

2. See Report of Department of Public Health of Tasmania for 1906-7, by J. S. C. Elkington, Esq., M.D., D.P.H., Chief Health Officer.

trial Legislation (Section XXVII.). Certain particulars have also been given in Section XXIV. (see pages 944-6) of this book regarding Orphanages, and Industrial and Reformatory Schools in Australia. Though perhaps not directly connected with the subject of Public Hygiene, it will be convenient to refer briefly in this sub-section to the principal Acts which have been passed in each State dealing with the subject of child-life, and to the principal functions of the States' Children's Departments.

2. **New South Wales.**—In this State there is a State Children's Relief Board under the direct control of an Honorary Board of nine members and under the administration of the Minister of Public Instruction.

(i.) *Scope of Operations.* The scope of the Department's operations comprises matters under the following Acts:—

(*a*) *The Infants' Protection Act 1904.* This Act deals with the control of children up to the age of seven years in licensed homes, and with the supervision of such homes. These latter fall into two classes—(1) The private homes of individual women householders, licensed for two or three children, and (2) institutions maintained by public subscription, licensed for any number of children up to 100. The Act also deals with paternity proceedings in connection with the enforcement of maintenance for illegitimate children.

(*b*) *The State Children's Relief Act 1901.* This Act deals with the boarding-out of destitute children, and includes the extension of monetary aid for children under twelve years of age who are allowed to remain with their own mothers when the latter are widows or deserted wives in destitute circumstances.

(*c*) *The Children's Protection Act 1902* deals with the supervision of lying-in homes, in so far as the children born therein are concerned. It also provides for the registration of children up to three years old boarded out privately apart from their mothers.

(*d*) *The Neglected Children's and Juvenile Offenders Act 1905* has provided for the establishment of Children's Courts throughout the State. The Act deals with the disposal of neglected and uncontrollable children and juvenile delinquents who come before the Courts. It contains provisions for the supervision of truant children, and for the introduction of machinery necessary to carry out the purposes of the Act.

(*e*) *The Public Instruction Act 1880.* The supervision of all children of school age is carried out by officers of the State Children's Relief Department, and action in regard to truancy and prosecutions for breaches of the compulsory clauses of the Public Instruction Act are undertaken.

(ii.) *General Supervision of Conditions of Infant Life.* The principal functions of the State Children's Relief Department are as follows:—(*a*) Provision for sickly infants with, or without, their mothers at the homes at Paddington and Thirlmere. About twenty children are treated in each home. (*b*) The compulsory attendance of guardians of infants, boarded out independently by their mothers under the Children's Protection Act, at the Metropolitan Hospital fortnightly, in order that the children in their charge may be systematically supervised by the doctors, and the development of ailments checked. (*c*) A home for healthy babies, twenty in number, at Croydon, with their mothers, the object being to free the latter from the more or less contaminating influences of large institutions, and at the same time to protect the children from dangers of infection. (*d*) The establishment of separate cottage homes for invalid children, according to their ailments, including special cottages for the scientific treatment of epileptic and feeble-minded children. (*e*) The supervision of all children dealt with at the Children's Courts, with the exception of those sent to the training-ship *Sobraon*, the Carpenterian Reformatory, and the Industrial School for Girls. A special aspect of the Board's work under this heading is the supervision of children released on probation, and of children committed to the Farm Home, Mittagong.

3. **Victoria.**—The conditions of infant life in Victoria are, to some extent, supervised by the Department for Neglected Children and Reformatory Schools under the Neglected Children's Act 1890, the Crimes Act 1890, and the Infant Life Protection Act 1907. In Melbourne the Lady Talbot Milk Institute was established in 1908 in order to provide a supply of pure milk for infants. In the first annual report of the Institute, it is stated that out of about 300 infants supplied with milk by the Institute during 1908-9, only eight died. Crêches have been established in many of the suburbs of Melbourne.

(i.) *The Neglected Children's Act 1890.* This Act provided for the establishment of receiving houses and probationary schools, and for the committal of neglected children to the care of the department already referred to, or to approved private persons or institutions. Assistance is afforded to the department by ladies' committees in finding suitable homes for boarded-out children, and in supervising these homes. A receiving depôt has been established, and special schools are provided for boys who are backward in their education. A certain number of boys, who bear the best of characters, are sent to learn farming at the Rutherglen Viticultural College.

(ii.) *The Crimes Act 1890* provided, *inter alia*, for the establishment of reformatory schools for convicted children. During the year 1908 there were fifty-two court committals and ten transfers from gaol to reformatory schools.

(iii.) *The Infant Life Protection Act 1907.* This Act came into force on the 31st December, 1907, and all infants then in registered homes were transferred to the care of the department. Provision is made for the inspection of registered homes, which are divided into districts, allotted to four inspectors. The Act does not provide for the registration or supervision of maternity homes.

(iv.) *The Children's Court Act 1906.* This Act provides for the establishment of Children's Courts in every place in the State where a Court of Petty Sessions is appointed to be held. Any boy or girl under the age of seventeen years may be released by the Court on probation under the supervision of a Probation Officer, who may at any time bring before the Court any child under his supervision who has broken any of the terms of his probation. The Courts have power to commit children to the Neglected Children's Department or to reformatory schools.

4. **Queensland.**—The Infant Life Protection Act 1905 is administered by the Commissioner of Police. This Act provides, that, with certain exceptions, no person may receive, in consideration of any payment, into his house any infant under the age of three years for the purpose of nursing such infant apart from its parents for a longer period than forty-eight hours, or of adopting such infant, unless the person is registered as the occupier of the house and the house is registered as a nursing home. Registration of adopted infants is compulsory, and notice of the birth or death of illegitimate infants must be given within three days. Police investigation occurs in the case of every illegitimate child born, whether the child be finally sent to a nursing home, adopted, or taken charge of by parents or relatives.

The Lady Chelmsford Pure Milk Institute was opened in 1909 for the supply of a clean pure milk in Brisbane for infant feeding. The delivery of the milk began on the 1st July, 1909.

5. **South Australia.**—The State Children's Act 1895 provides for the constitution of a council to have the control of all State children and the supervision of all institutions for their reception, education, or training. The Act provides for the establishment and inspection of institutions, for the commitment, release, and apprenticing or placing out of children, and for the licensing and supervision of lying-in homes and foster-mothers. Illegitimate children are also received into the institutions under the care of the council.

and are placed out in various homes. It is stated that the result, so far as illegitimate children are concerned, is that the death-rate of infants supervised by the council is under 7 per cent., while the death-rate of those not under such supervision is 45 per cent.

6. **Western Australia.**— In Western Australia the State Children's Act 1907 provides for the control of boarded-out infants, the registration of foster parents, and the general supervision of the conditions of infant life and of neglected or destitute boys and girls under the age of eighteen years. The Act is administered by the State Children's Department. The registration of maternity homes is obligatory, and persons acting as paid foster-mothers to any child under the age of three years must be licensed. Neglected or destitute children may be committed to orphanages, and convicted children to industrial schools. There is one Government institution under the Act, and it is used as a receiving depôt for the temporary detention of all classes of children. The Act also provides for the establishment of Children's Courts, which must not be held in any police or other court-house.

With regard to the prevention of infantile mortality, the educational aspect has been met by the free distribution of pamphlets giving directions to mothers respecting the care and feeding of infants.

7. **Tasmania.**—The Infant Life Protection Act 1907, which is administered by the Commissioner of Police, provides for the protection of illegitimate and privately boarded-out infants, and for the compulsory registration of nursing homes and occupiers. Notice of the death of an infant in a registered home must be given within twenty-four hours, and the adoption of illegitimate infants under five years of age must be registered. Notice of the birth or death under the age of five years of an illegitimate infant is also compulsory. The Act also deals with paternity proceedings, in connection with the payment of preliminary or maintenance expenses for illegitimate children.

8. Medical Inspection of State School Children.

1. **Introduction.**—For many years medical officers of health and many others concerned in education generally have, from time to time, suggested the desirability of a medical inspection of school children. The State, which enforces school attendance under penalties, is also under the obligation of securing a satisfactory hygiene for the child during such attendance. Moreover, efficiency in education demands several things, viz., that the conditions under which the studies are made shall be physically and hygienically satisfactory; that there shall be no undue concentration of nervous effort on school work, and that the child shall be reasonably safeguarded against infection, etc. Only by an adequate scheme of medical supervision can these results be attained.

2. **Co-ordination of Effort.**—It may be seen in the succeeding parts of this subsection that, while the medical inspection of school children has been carried out in some of the States of the Commonwealth in a systematic manner, in other States but little has been done in the direction indicated. So far as it has been carried out, the medical inspection of school children goes to shew that in Australia, as in other lands, the hygiene, both of the schools and of the pupils therein, is more defective than is ordinarily recognised, and that, not only preventable physical injury to the rising generation from school conditions can be avoided, but also instruction itself can be made more efficient by a proper regard to the demands of a good school hygiene. With a view to securing uniformity of procedure in the several States, and to coming to an agreement as to how

far the scheme to be adopted should lean to the purely hygienic or the purely anthropometric side of the work, it has been proposed to hold an Interstate Conference of the Presidents of the Boards of Health and the Directors of Education. It was also proposed that, on comparable observations of physical characteristics being made by the States on a national basis of a proportion of their State school children, the necessary comparisons and interpretation of results should be undertaken in the Commonwealth Bureau of Census and Statistics. As regards the anthropometrical aspect of the matter, a uniform scheme of comparative physical observations of children would go to shew the ultimate influence of the Australian climate on the British race, and would serve as a guide to the importance of certain forms of physical training. In addition, the importance of gathering information concerning the general trend of physical and mental development of Australian children, the variations induced by environment in different localities and different latitudes, and the extent of preventable influences capable of injuriously affecting mental and physical development, are sufficiently apparent.

3. **New South Wales.**—In this State, arrangements were made in May, 1907, for the medical inspection of school children in Sydney, and later in the year the work was extended to Newcastle. At the inauguration of the scheme, it was considered advisable to restrict the work of the first year to two populous centres in order to determine what procedure would be necessary, and what limits could best be assigned in the further development of the work. Two inspectors were appointed for the first year's work, and the appointment of a third inspector in March, 1909, has enabled the scheme to be extended to the outlying suburbs of Sydney.

The results of the second year's work shew that during that period 98 schools, having an enrolment of 66,000 pupils, were visited by the inspectors. Of the total number of pupils, 14,360, or 21 per cent., were presented by the teachers for medical inspection as suffering from some physical defects. Of that number, 8216, or 57 per cent., were found to be suffering from defects of vision; 7171 children, or 49 per cent., were returned as suffering from post-nasal trouble; 3450, or 24 per cent., from throat trouble; 855, or 6 per cent., from swollen glands; and 615, or 4 per cent., from either defective hearing or ear trouble.

NEW SOUTH WALES.—HEIGHT AND WEIGHT OF SCHOOL CHILDREN, 1908-9.

Age last Birthday.	Boys—26,597 Records.		Girls—23,101 Records.	
	Average Height.	Average Weight	Average Height.	Average Weight
	Inches.	Lbs.	Inches.	Lbs.
3 years	40.66	39.03	40.04	37.91
4 ,, ...	41.48	39.73	40.47	38.32
5 ,, ...	42.43	41.63	42.02	40.32
6 ,, ...	44.28	44.89	44.18	43.90
7 ,, ...	46.52	49.91	46.13	48.25
8 ,, ...	48.27	53.54	48.11	53.09
9 ,, ...	50.44	58.67	49.97	57.46
10 ,, ...	52.19	63.58	51.94	62.87
11 ,, ...	53.85	68.86	53.96	69.61
12 ,, ...	55.55	74.94	56.02	77.29
13 ,, ...	57.43	82.63	58.31	86.95
14 ,, ...	60.29	94.62	60.43	96.99
15 ,, ...	63.00	108.78	61.19	105.40
16 ,, ...	65.36	122.17	63.20	110.93
17 ,, ...	66.76	132.02	63.03	114.63
18 ,, ...	67.56	136.09	63.02	120.60

Since its initiation in 1907, the scheme has embraced 105 schools, having an enrolment of 70,169 pupils, while upwards of 50,000 physical records have been received.

from teachers. During the year 1908-9, the anthropometric survey, comprising height and weight measurements and records of vision, was extended to schools in the outlying suburbs of Sydney, and in the Broken Hill, Kempsey, Grafton, and Lismore districts. The foregoing table shews the results of height and weight measurements recorded during the year 1908-9.

4. **Victoria.**—In Victoria three medical inspectors have been appointed by the Education Department, and a commencement was made towards the end of 1909 by the examination of the pupils attending the Melbourne Continuation School. An Advisory Committee was also appointed to formulate a scheme of medical inspection, which it is proposed to extend to all State schools in Victoria. The chief work of the inspectors has so far been a preliminary investigation of the health of the pupils in various schools in town and country, and it is stated in the Report of the Minister of Public Instruction for the year 1909-10 that the result of this investigation has shewn the presence of an amount of physical defect which, were it not paralleled in other lands would, by its magnitude, seem incredible. Up to the 30th June, 1910, the total number of children examined was 3560, of whom 2519 were in primary schools; of the latter number 1293 were boys, and 1226 girls. The following table gives particulars of defects found in the children examined in primary schools :—

VICTORIA.—MEDICAL INSPECTION OF CHILDREN IN PRIMARY SCHOOLS—PARTICULARS OF DEFECTS, 1909-10.

Particulars.	Boys.		Girls.		Total.	
	Number.	Percentage	Number.	Percentage	Number.	Percentage
Number Examined ...	1,293	...	1,226	...	2,519	...
Defects—						
Vision	259	20	179	14.5	438	17
Hearing	228	17.5	249	20	477	19
Nose and throat ...	462	35.5	214	17.5	676	27
Heart	43	3.5	64	5	107	4
Anæmia	76	6	46	3.7	122	4.8
Hair	40	3	471	38	511	20
Deformities—						
Chest	189	14.5	107	8.7	296	12
Shoulders	125	9.5	120	9.7	245	9
Curvature	19	1.5	34	2.7	53	2.1
Nutrition—						
Below	107	9	72	6	179	7

Although the Health Acts have no relation to buildings owned or controlled by the Crown, as the result of a conference in 1905, between officers of the Education and Public Works Departments, a set of standard primary rules as to the hygienic requirements of State schools was drawn up, and since that time these standards have been utilised in connection with the construction of new State schools, and when practicable, in connection with alterations effected in old school buildings. Lectures have been given to school teachers on questions appertaining to school hygiene.

5. **Queensland.**—In this State, a systematic scheme for the inspection of State school children has recently been prepared. An elaborate undertaking is not to be

carried out at present, but the scheme is to be extended as success is achieved and beneficial results are proved. A course of instruction in hygiene as applied to school life is given at the Central Technical College for the special benefit of teachers, and a series of lectures and demonstrations has been organised between the Education Department, the Department of Public Health, and the Royal Sanitary Institute. Towards the end of 1907 a special examination of the eyes of 1745 school children and of 187 adults disclosed the fact that 385 persons, or 20 per cent., of those examined, suffered from imperfect vision resulting from eye disease, while there were 1740 persons, or 90.1 per cent., with affected eyes or eyelids or both. In 1909 a scheme to cope with ophthalmia was inaugurated by the Department of Public Instruction and has met with a considerable measure of success. Various investigasions have also been made from time to time regarding outbreaks of disease among scholars, and all the schools within the Metropolitan area have been inspected by officers of the Department of Public Health, and as a result numerous sanitary defects remedied.

6. **South Australia.**—In South Australia a commencement was made in the year 1909 towards the establishment of a scheme for the medical inspection of school children, by the examination of 1000 children in different parts of the State. No children under seven years nor over 15 years of age were examined. Investigations were made with regard to personal appearance, cleanliness, height, weight, chest measurements, teeth, eyesight, hearing, nose and throat, etc., and the results were, on the whole, satisfactory.

7. **Western Australia.**—During the latter part of 1906 and the first half of 1907 an extended examination of about 3300 children was carried out in Western Australia by the Department of State Medicine and Public Health with the co-operation of the Education Department. These children were attending the State schools in Perth, Fremantle, Kalgoorlie, Boulder, Bunbury, and Albany. Only two children were withheld by their parents from examination. The supervision of the health of school children has been extended up to the present, and advantage has been taken of every occasion on which the medical officers of the Department have visited country districts on official business to make a physical examination of the school children. Many physical defects among the children were detected, and the co-operation of the Inspector-General of Schools has resulted in steps being taken, where possible, to provide better hygienic conditions. The system followed during 1909 was that, wherever possible, a visit was made to a school and the teacher was asked to bring up all children who appeared to be suffering from any physical defects or bodily ailments. The exact condition of the child having been determined, a notice was sent to the parents calling attention to the necessity of obtaining treatment for the defect.

8. **Tasmania.**—The credit of being the first State in the Commonwealth to provide for the medical inspection of schools and school children in a systematic way rests with Tasmania, where, under the direction of the Chief Health Officer and the Director of Education, about 1200 children attending schools in Hobart were inspected in 1906. The general examination was based upon that of the Royal Commission on Physical Training (Scotland) of 1903, but considerable modifications and adaptations were found necessary in order to fit it to immediate requirements. No attempt was made to secure anthropometric observations beyond those of unquestionable medical value, and in only one case (colour of eyes) were any purely anthropological data collected. The sociological data obtained (parental occupation, etc.) were found of much service, and produced some interesting comparative results. Parents were given the option of declining examination for their children. The total number of children excluded on this account was 184, or 13.1 per cent. on the total number examinable.

The administration of the Medical Branch has continued to be carried out for the assistance of the Education Department, and from March, 1907, to June, 1909, the total number of children examined in State schools was 17,998. Of these, 10,095 were examined in country schools, 4681 in Hobart, and 3222 in Launceston. During the year 1908-9, the number of visits to schools made by the three medical inspectors was 641. During the same year twenty-one lectures were given at schools and were attended by about 1250 mothers and guardians. It is stated that these meetings are of great practical value in enabling an important class of parents to be reached by sanitary teaching in a form and manner which would be practically impossible under any other conditions, and that they also gain a great deal of sympathy and support for the medical work in schools, by enabling parents to become acquainted with the methods and objects underlying it. A course of lectures on School Hygiene has also been delivered to teachers at the Training College.

SECTION XXXI.

THE COMMONWEALTH SEAT OF GOVERNMENT.*

§ 1. The Selection of the Territory.

1. **Constitutional Provisions.**—The powers under which the Commonwealth Government has acted in taking steps towards the establishment of a seat of Government are conferred by the Commonwealth Constitution Act 1900. By section 125 of that Act (see p. 44 hereinbefore) it was provided that the seat of Government of the Commonwealth shall be determined by the Parliament and shall be within territory granted to, or acquired by, the Commonwealth. It was also provided (*a*) that the territory shall be situated in New South Wales not less than 100 miles from Sydney, (*b*) that it shall contain an area of not less than 100 square miles, and (*c*) that such portion of the territory as consisted of Crown lands shall be granted to the Commonwealth without any payment therefor. Finally the section provides that Parliament shall sit at Melbourne until it meets at the seat of Government.

2. **Early Steps towards Selection of the Site.**—During the years immediately preceding the federation of the Australian colonies a number of sites was suggested as being suitable for the establishment of the Commonwealth seat of Government, and on the 14th November, 1899, a Royal Commission was appointed by the Government of New South Wales to inspect and report in regard to places in that State proposed for the Federal capital. In all 40 different sites were submitted for consideration, and 23 of these were inspected by the Commission. The conclusion of this Commission was that any one of the three sites—(*a*) Orange (or Canobolas), (*b*) Yass, and (*c*) Bombala-Eden (Southern Monaro) would be suitable for the purpose desired. Having regard to the future, rather than the initial requirements of the Commonwealth, it was considered that Southern Monaro was entitled to the first place, and that Canobolas and Yass might be bracketed as about equally suitable.

(i.) *Inspection of Sites by Members of Commonwealth Legislature.* During the year 1902 the Commonwealth Government decided to give members of the Legislature an opportunity of becoming personally acquainted with the districts in which sites for the Federal capital city had been suggested. These inspections were carried out, and a considerable number of members of both Houses of the Commonwealth Parliament thus gained a knowledge of the districts such as personal inspection alone can supply.

(ii.) *Royal Commission to Report upon Proposed Sites.* With a view to giving effect to the constitutional provision referred to above, the Commonwealth Government on the 14th January, 1903, appointed a Royal Commission, composed of four members, to inquire into and examine the sites proposed for the seat of Government in the following

* This article has been prepared from information gained from personal observation and from data kindly furnished by Lieut. Colonel David Miller, V.D., I.S.O., Secretary for Home Affairs, under whose supervision all preliminary operations in the Federal capital territory have been conducted. Information has also been supplied by Lieut. Colonel Owen, A.I.C.E., Director-General of Works, and Mr. C. R. Scrivener, Director of Commonwealth Lands and Surveys.

localities, viz.:—Albury, Armidale, Bombala, Lake George, Orange—including Bathurst and Lyndhurst—and Tumut, and to report upon each of the sites with as little delay as possible. This Commission inspected each of the districts referred to, and on the 16th July, 1903, handed in its report, which was supplemented on the 4th August, 1903, by a special report on a proposed site for the capital at Dalgety. As to topography and general sutiability the sites inspected were placed in the following order—Albury, Tumut, Orange, Lyndhurst, Armidale and Bathurst (equal), Lake George, and Bombala; Dalgety was placed on an equality with Bombala, but as regards water-supply it was considered second only to Tumut.

(iii.) *Seat of Government Bill 1903.* On the 22nd September, 1903, the Commonwealth Government submitted to the House of Representatives a proposal that "with a view of facilitating the performance of the obligations imposed on Parliament by section 125 of the Constitution Act, it is expedient that a conference take place between the two Houses of Parliament to consider the selection of a seat of Government of the Commonwealth." This motion was passed by the House of Representatives, but was not concurred with by the Senate. On the 1st October, 1903, the Government introduced a "Seat of Government Bill" in the House of Representatives, with the result that after a ballot had been taken with a view to determining the opinions of members as to the place in New South Wales at or near which the seat of Government of the Commonwealth should be situated, Tumut was selected. The Bill as passed by the House of Representatives was read a second time in the Senate on the 14th October, 1903, and returned with the amendment of the substitution of Bombala in place of Tumut. The Bill as amended was considered in the House of Representatives, where, on the 20th October, 1903, the amendment by the Senate was disagreed with. The Senate, however, decided to insist upon the amendment referred to. It therefore appeared desirable to obtain further topographic, climatic, and other information regarding the proposed capital sites, particularly with reference to the relative merits of the Tumut and Bombala sites, and with these objects in view the Commonwealth Government secured from the Government of New South Wales the loan of the services of two surveyors, one of whom investigated the Southern Monaro district, the other the Tumut district. Both of these surveyors submitted their reports, accompanied by plans and statistical information, in May, 1904.

3. **The Seat of Government Act 1904.**—On the 15th August, 1904, the "Seat of Government Act 1904" was assented to. By this Act is was determined that the seat of Governnent should be within seventeen miles of Dalgety, in the State of New South Wales, and that the territory to be granted to or acquired by the Commonwealth, within which the seat of Government was to be situated, should contain an area of not less than 900 square miles and should have access to the sea.

At this juncture correspondence took place between the Governments of the Commonwealth and the State of New South Wales, with the object of obtaining the consent of the State to the provisions of this Act, and on the 22nd December, 1904, the Premier of New South Wales forwarded to the Prime Minister copies of resolutions passed by both Houses of the State Parliament to the effect that:—(*a*) The State would not grant 900 square miles in any part of the State. (*b*) The true intent of section 125 of the Constitution Act, as understood by that State, was that the area should be 100 square miles. (*c*) The Government was authorised to offer between 100 and 200 square miles at or near Tumut, Lyndhurst, or Yass. (*d*) The State was prepared to make provision outside such areas for water-supply. (*e*) The matter of railway construction should be carefully arranged, as the State was not prepared to enter into any large expenditure. Consequent upon these resolutions, correspondence, extending over a considerable period, took place between the Commonwealth and State Governments, more particularly respecting the technical interpretation of section 125 of the Constitution Act and the correct mode of procedure to be adopted by the Commonwealth and State in giving effect thereto, and finally a line of action was mutually agreed to between the two Governments.

4. **The Seat of Government Act 1908.**—On the 22nd September, 1908, the Minister of State for Home Affairs obtained leave to introduce a Bill for an Act to determine more definitely the seat of Government in the neighbourhood of Dalgety, and to provide for the acceptance by the Commonwealth of the territory and for other matters in relation thereto. This Bill was read a second time on the following day, and, after various ballots had taken place with the object of further determining the views of members as to the suitability of the several districts inspected, the Bill was passed by the House of Representatives with the substitution of Yass-Canberra for Dalgety. This alteration was approved by the Senate and the Bill was assented to on the 14th December, 1908. The chief provisions of this Act were (*a*) that the seat of Government should be in the district of Yass-Canberra in the State of New South Wales, (*b*) that the territory to be acquired by the Commonwealth should contain an area of not less than 900 square miles, and (*c*) that the territory should have access to the sea. Another important provision determined that the amount of compensation to be paid by the Commonwealth for the acquisition of any private lands within the territory should not exceed the value of the land on the 8th October, 1908, and that in other respects the provisions of the Lands Acquisition Act 1906 should apply. As already stated (see p. 1134 hereinbefore), all Crown lands must (under section 125 of the Consititution Act) be granted to the Commonwealth without any payment. The provision of the Act of 1908 just referred to is of considerable importance, inasmuch as, in the absence of this or any similar provision, the valuation of private lands, within the territory by the Commonwealth, would have to be effected under the Lands Acquisition Act 1906. The compensation to which the owner would be entitled under the latter Act would be the present value and not the value as at the 8th October, 1908.

Under the Act of 1908, the district in which the seat of Government is to lie was finally selected; it yet remained, however, to determine the actual territory for the seat of Government within that district, and to provide the machinery for the acquisition of such territory by the Commonwealth. The locality of the Yass-Canberra district may be seen on reference to the map given on page 1147.

§ 2. The Acquisition of the Territory.

1. **Territory as First Proposed.**—In order to enable the Commonwealth Government to decide on the most suitable territory for the purposes of the seat of Government within the Yass-Canberra district, a topographical investigation of that district was carried out early in 1909. In the first place a preliminary examination was made by a surveyor appointed for that purpose, and a report was issued as the result of this examination, stating that the site in the vicinity of Canberra approached nearer to what was required than any other in the Yass-Canberra district. Suggestions were also made as to the territory to be acquired by the Commonwealth, and it was recommended that such territory should include not only the site for the capital city, but also the catchment area (of the Cotter River) required for the domestic and civic water supply of the city, and the catchment areas (of the Molonglo and Queanbeyan Rivers) of the streams passing through the city site.

In March, 1909, an Advisory Board, consisting of four members, was appointed to consider the above report and to advise as to other matters requiring investigation. In the selection of the territory this Board gave prominence to certain essential qualifications and factors, viz.:—(*a*) contour and physical features; (*b*) area available; (*c*) aspect and shelter; (*d*) panoramic value; (*e*) railway facilities and approach; (*f*) facilities for classification of city areas; (*g*) ornamental water areas; (*h*) water-supply for domestic, power, and ornamental purposes; (*i*) environment and park lands; and (*j*) suburban settlement. The Board concurred with the conclusions arrived at as to the

suitability of the site for the capital city at Canberra, and also with the recommendations respecting the territory to be acquired by the Commonwealth. The Board further recommended (*a*) that the essential features of the proposed territory should be tested by actual survey; (*b*) that further investigation be made as to irrigation areas in connection with the disposal of effluent resulting from sewage purification; and (*c*) that a preliminary investigation should be made of practicable routes for a railway between the site and the sea coast. These last recommendations were duly carried out and a report was furnished advising that an area of approximately 1015 square miles should be acquired in the vicinity of Canberra, together with an area of about 2300 acres at Jervis Bay for the purposes of a Commonwealth port. This recommendation was adopted by the Commonwealth Government; the boundaries of the territory which it was at this stage proposed to acquire are indicated by the unbroken lines on the map on page 1148.

2. **Territory as Subsequently Agreed to.**—On the 20th July, 1909, the Prime Minister forwarded particulars of the proposed territory to the Premier of New South Wales, and invited him to take steps under section 111 of the Constitution Act* to pass a State Act for the surrender to the Commonwealth of sovereign rights over the territory comprising 1015 square miles, and to grant to the Commonwealth the area at Jervis Bay suggested for use in connection with the establishment of a Federal port. Correspondence ensued at this stage, and eventually a conference took place at Melbourne, with the result that the Premier of New South Wales submitted a proposal to the Commonwealth for the transfer of an area comprising 900 square miles, differing with the Commonwealth's proposal in the following particulars:—

(*a*) The exclusion of that portion of the catchment area of the Molonglo and Queanbeyan Rivers lying to the eastward of the Goulburn-Cooma railway line, over which area the Premier offered to secure to the Commonwealth water rights. This area, which comprises about 580 square miles, is shewn on the map on page 1148, and is indicated by the cross-hatched boundary.

(*b*) The addition to the remaining portion of the territory as proposed by the Commonwealth of an area of 465 square miles embracing the catchment areas of the Gudgenby, Naas, and Paddy's Rivers. The boundaries of this area are shewn on the map on page 1148 by the broken lines.

The territory thus suggested as the seat of Government is shewn on the map on page 1148, its boundaries being left free from cross-hatching. It may be seen that this territory (which, together with the area at Jervis Bay, has now actually been granted to and acquired by the Commonwealth) consists of two parts—(*a*) an area of about 435 square miles lying to the west of the Goulburn to Cooma railway and included in the original recommendation of the Advisory Board, and (*b*) a further area of about 465 square miles, including the catchment areas of the Gudgenby, Naas, and Paddy's Rivers. The total area of the territory is, therefore, approximately 900 square miles.

It may here be remarked that negotiations are now in progress between the Commonwealth and New South Wales Governments with a view to the acquisition by the Commonwealth of the catchment areas of the Queanbeyan and Molonglo Rivers. The Advisory Board regard it as essential that this area should be vested in the Commonwealth for the following reasons:—(*a*) To regulate the flow of the Molonglo River at the city site; (*b*) to prevent pollution; (*c*) to adopt measures for minimising turbidity; (*d*) to regulate flood waters; and (*e*) to provide an auxiliary source of water power.

3. **Agreement between Commonwealth and New South Wales Governments.**—On the 18th October, 1909, the Prime Minister of the Commonwealth and the Premier of

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* This section provides as follows:—"The Parliament of a State may surrender any part of the State to the Commonwealth; and upon such surrender, and the acceptance thereof by the Commonwealth, such part of the State shall become subject to the exclusive jurisdiction of the Commonwealth."

New South Wales, subject to the approval of their respective Parliaments, agreed to the surrender by the State and the acceptance by the Commonwealth of the territory referred to in the preceding paragraph hereof, and made certain stipulations with respect to the surrender and acceptance of the territory.

The State of New South Wales agreed to surrender to the Commonwealth for the purposes of the seat of Government the territory therein described, and as shewn on the map on page 1149 hereof. The State also agreed to grant to the Commonwealth an area of two square miles for the purposes of a Commonwealth port, and in addition thereto certain other areas aggregating 2302 acres, which were considered necessary for the defence of the port. The State of New South Wales also granted to the Commonwealth :—(*a*) the right to construct, maintain, and work a railway from the territory to Jervis Bay; (*b*) The right to use the waters of the Snowy River or such other rivers as may be agreed upon for the generation of electricity for the purposes of the territory; (*c*) paramount water rights over the catchment areas of the Queanbeyan and Molonglo Rivers and their tributaries.

The State further agreed:—(*a*) To reserve from sale, lease, and occupation, except with the concurrence of the Commonwealth, all Crown lands in the catchment areas above referred to; (*b*) to protect from pollution the waters of the Queanbeyan and Molonglo Rivers; (*c*) in the event of the Commonwealth constructing a railway within the territory to its northern boundary, the State agreed to construct a railway from a point near Yass to join that railway.

4. **Seat of Government Acceptance Act 1909.**—On the 13th December, 1909, the Seat of Government Acceptance Act was assented to. This Act was expressed to commence on a date to be fixed by proclamation after the New South Wales Parliament had passed an Act notifying the agreement and surrendering the territory. The Acceptance Act confirmed the agreement (which was incorporated as a schedule to the Act), determined the site of the seat of Government, and authorised the Governor-General to declare by proclamation that on and from the proclaimed day the territory was accepted by the Commonwealth. It also made provision for the continuance in the territory, after its acquisition by the Commonwealth, of State laws and private interests in land and for the commencement of the administration of the territory by the Commonwealth.

On the 14th December, 1909, a similar measure entitled the Seat of Government Surrender Act was passed by the Government of New South Wales. This Act came into force by proclamation on the following day; it ratified the agreement and surrendered the territory to the Commonwealth.

5. **Proclamations Effecting Acquisition of Territory by Commonwealth.**—On the 20th January, 1910, a proclamation was issued by the Governor-General bringing the Seat of Government Acceptance Act into force on the 22nd January following. The effect of this proclamation was to bring the Act into force to the extent of enabling the Governor-General to issue a second proclamation vesting the territory in the Commonwealth. Prior to the issue of the second proclamation it was, however, considered advisable to secure further legislation in the direction of an Act to provide for the proper government and administration of the territory. The *Seat of Government (Administration) Act* was accordingly passed on the 25th November, 1910; the provisions of this Act are referred to in a later part of this section. On the 5th December, 1910, the second proclamation was carried vesting the territory in the Commonwealth on and from the 1st January, 1911.

§ 3. Physiography.

1. **General.**—The general locality of the Federal territory is shewn on the map on page 1147. The chief topographical features of the whole territory may be seen by reference to the map on page 1149, while those of the districts in the immediate vicinity of the city site are shewn on a larger scale on the map on page 1150. The total area of the territory is approximately 900 square miles, or 576,000 acres, of which it will be necessary to reserve from occupation the catchment area of the Cotter River, which has an extent of 170 square miles, or 108,800 acres. An area of about 12 square miles, or 7680 acres, has been set apart for the purpose of the city site, and it is proposed to reserve a further area of about 100,000 acres for parks, roads, military college, and other public purposes outside the city area, leaving 359,520 acres available for profitable occupation under reasonable conditions.

As regards accessibility, Canberra is 204 miles distant from Sydney, 429 miles from Melbourne, 912 miles from Adelaide, and 929 from Brisbane, from which it may be seen that the capital site is reasonably equidistant from the chief centres of population of the Commonwealth. As to access to the sea, it has been shewn that there is a practicable route for a railway between Canberra and Jervis Bay with a length of about 123 miles. To the north of the territory the country is open, and good roads lead to Yass (*via* Hall) and Gundaroo (*via* Sutton).

2. **Chief Topographical Features of Federal Territory.**—For topographical purposes the territory may be classified under four main heads:—(i.) The Canberra Ridge and Plain; (ii.) the Murrumbidgee Scarp; (iii.) the Paddy's and Gudgenby Rivers areas; and (iv.) the Cotter River catchment.

(i.) *The Canberra Ridge and Plain.* This area covers practically the whole of the territory lying to the east and north-east of the Murrumbidgee River. It is bounded on the north-east by the range forming the northern watershed of the Molonglo River and on the south and south-west (to within about eight miles south of Queanbeyan) by the Goulburn-Cooma railway. The area consists of ridges of about 2600 feet elevation running chiefly north and south, and alternating with plains of some 1800 feet; it is intersected by the Molonglo River, and includes the site which has been selected for the Federal capital city (see para. 3 below and maps on pages 1149-50). To the west of Queanbeyan, which is situated at the foot of the Jerrabombera Ridge, the valley opens out greatly, and in place of the hilly country on the eastward slopes of the Dividing Range, the landscape consists of a number of isolated knobs rising from very gently undulating pasture lands and of the ridges running down from the highlands of the Molonglo catchment. These are intersected by the winding course of the Molonglo River itself. There are five of these knobs in the immediate vicinity of the city site—Ainslie (2762 feet) lies to the north-east, Black Mountain (2658 feet) to the north-west, Mugga (2662 feet) to the south, and Taylor (2800 feet) and Stromlo (2570 feet) to the west—all rise about 900 feet above the Canberra plains. These knobs resemble volcanic cones, but they are in fact "residuals" of an older land surface of about 3000 feet level.

(ii.) *The Murrumbidgee Scarp.* This is a narrow ridge of country extending from almost as far north as the junction of the Murrumbidgee and Molonglo Rivers, along the west bank of the Murrumbidgee, to the south-western limits of the Federal territory. It comprises the area covered by the Bullen and Yarara Ranges, which rise to a height of 3084 feet at Castle Hill and to 4068 feet at Yarara, further to the south. A strong difference in the character of the two banks of the Murrumbidgee may be noticed and can be seen even on the rough contours shewn on the map on page 1149. The eastern bank is

low and undulating, and opens out into the Canberra and Molonglo plains, but the western bank is abrupt and continuous for many miles. Those tributaries of the Murrumbidgee which cut through the ranges on the west emerge through gorges several hundred feet in depth. The valley of the Murrumbidgee is constricted at two places, the Tharwa Gap (between Tennent and Rob Roy in the south) and the Urayarra Gorge (between McDonald and Stromlo in the north). These were formerly important crossings to the Gudgenby and Cotter areas respectively, but have since been supplied by the two Murrumbidgee bridges in the Federal territory. The Tharwa bridge is determined by the Old Divide forming suitable bluffs at each side of the river; the Urayarra bridge crosses the river at a place where a trenching of the main Murrumbidgee valley occurs.

(iii.) *The Paddy's and Gudgenby Rivers Areas.* These areas cover respectively the northern central and the southern central districts of the territory. To the west of the Murrumbidgee the character of the country changes somewhat abruptly. There are no flat plains with isolated knobs, but restricted valleys culminating in mountains rising to 4000 or 5000 feet. Paddy's River, with its tributaries the Tidbinbilla River and the Gibraltar and Blue Gum Creeks, flows into the Cotter River near the confluence of that river and the Murrumbidgee. Though it occupies a comparatively open valley at its head, it enters the Cotter by gorges a hundred feet or more deep. The Gudgenby, with its main tributary the Naas River, flows into the Murrumbidgee near Tharwa. The ridge of the hills constituting the catchment of the Naas River forms the lower western and southern boundaries of the territory for over 30 miles, the river itself running roughly parallel to the boundary. The contours of several of the various tributaries in the neighbourhood of Tharwa are quite abnormal, since many of these tributaries run into the main rivers in the wrong direction, *i.e.*, they run upstream. For example, the Gudgenby, Naas, and Chippendale tributaries are normal, but Sawyers' Creek, Booroomba Creek, Guises and Deep Creeks are all heading upstream at their several confluences.

(iv.) *The Cotter River Catchment.* Beyond the valleys of the Gudgenby and Paddy's Rivers are the precipitous valleys of the Cotter, separated from the country to the east by the 5000 feet ranges of Tidbinbilla. The catchment area of the Cotter River, from which the water-supply for the capital city is to be drawn, constitutes the western portion of the Federal territory. For many miles from its junction with the Murrumbidgee the Cotter is a narrow mountain stream, having a width of about 40 feet, the gradient of the bed being fairly uniform; it flows through a deep valley practically unoccupied, and, as no ring-barking of any moment has been done along its course, it is therefore unlikely that the water will be discoloured for a longer period than a few days. The upper reaches of the Cotter are still practically unknown. Only one or two surveyors and an occasional settler have ever been along the valley, which is completely uncharted. There are no roads, except that to the few farms at Brindabella (which is outside the Federal territory), and no settlements until Garrangobilly, on the main road between Tumut and Kiandra, is reached. In the ranges, surrounding the valley of the Cotter, are the mountains whose summits Coree (4657 feet), Tidbinbilla (5115 feet), McKeahnie (4904 feet), Bimberi (6264 feet), and Morgan (6144 feet) are amongst the highest in Australia. The Federal territory in fact extends to within 60 miles of Kosciusko (7300 feet), and includes a cluster of peaks over 5000 feet high, in addition to those mentioned.

3. **Topography of Capital Site.**—The locality of the site selected for the purpose of the Federal capital city is shewn on the map on page 1149; the topography of the site is shewn on a larger scale on page 1150. It is situated in latitude 35° 15′ S. and longitude 149° 15′ E. on the western side of the main Dividing Range; it is about 30 miles distant from that range and about 75 miles in a direct line from the eastern coast of Australia. The site may be described as a rectangular area, the eastern and western boundaries of the northern part resting on the slopes of Mount Ainslie and Black Mountain respectively, the southern boundary being intersected by the Narrabundah Range running from Mugga Mugga Mountain towards the Molonglo River. This river, which flows through the site

in a westerly direction, affords facilities for the conservation of water for ornamental purposes; it is joined by the Queanbeyan River at the town bearing that name and at a distance of some seven miles from Canberra. Through the latter place the river flows between low banks, giving everywhere an easy approach to the stream. The whole area is generally suited for building purposes, the feature contours being more marked, or bolder, on the south than on the north of the River Molonglo. The area set apart for the purpose of the city site covers approximately 12 square miles; this area was selected with a view to affording the fullest scope for the projection of the city design and the most effective location of the official centre.

The city will lie in an amphitheatre of hills, with an outlook towards the north and north-east, sheltered from both southerly and westerly winds, and in the immediate vicinity there are large areas of gently undulating country. The city will be visible on approach for many miles; the general contours of the country lend themselves to the purposes of effective city design, and streets with easy gradients can be readily laid out; prominent hills of moderate altitude present suitable sites for the principal public buildings. Some reference has already been made (see p. 1139 hereinbefore) to the nature of the country in the vicinity of Canberra. The comparative flatness of the landscape in the immediate foreground is broken by several conical hills arising from the Canberra plains and by the ridges running down from the highlands of the Molonglo catchment. The strike of these ridges is generally north and south; small tributaries, cutting the sides of the ridges, have converted them into picturesque features, while the pleasing effect of the outlook is still further enhanced by the graceful contours of the distant mountains.

No engineering difficulties oppose themselves to a satisfactory disposal of sewerage and effluent from treatment works. It will, however, be necessary to make provision for dealing with the storm waters, in which connection the general fall of the land favours a satisfactory scheme. There is a supply of perennially clear and pure water in the Cotter River, the catchment area of which embraces an area of about 170 square miles. According to recent records the supply of water at the point of gauging is sufficient for the domestic and civic requirements of a population of 200,000 persons based on a liberal scale.

(i.) *North of the Molonglo River.* The slopes towards the valley enclosed by these ranges culminating in Mount Ainslie and Black Mountain are at first abrupt, often rocky, sometimes precipitous, and clothed with an open forest of eucalypts, which extend to the junctions of the lower slopes with the gently undulating land and here and there projecting well out towards the centre of the valley. These two ranges are roughly three miles apart, the steeper slopes extending for a distance of about half a mile on either side, a narrow stretch of moderate inclination abutting upon the wider area of gentle undulation, which is relieved at intervals by elevated points rising some fifty feet above the general level. The soil in this valley is everywhere adapted for arboriculture, and much of it is of high quality suitable under modern methods of cultivation for the growth of crops.

(ii.) *South of the Molonglo River.* South of the Molonglo River the contour of the country is irregular, the Narrabundah Range, which culminates in Mugga Mugga (2662 feet), running in a north-westerly direction to Red Hill (about 2360 feet); here there is an almost abrupt descent to a level of about 2100 feet and beyond this point the range divides into a number of radiating spurs. On the Narrabundah Range and its subsidiary spurs down to the 1950 feet level there is an open forest of eucalypts, the average height of the trees being about 50 feet. No prominent watercourses flow through this area. Arboriculture will present no difficulty over any part of this land, for even on the higher rocky points there is a fair growth of trees.

(iii.) *The Molonglo River.* This river is ordinarily a sluggish stream; it drains some 700 square miles of country, and within and near to the city site it flows between

steep banks formed by the erosion of the alluvial plains at Canberra. During periods of prolonged drought the river ceases to flow; it is readily fordable at many places during the greater part of the year.

(iv.) *Shelter.* The largest areas sheltered from the most objectionable winds lie to the south of the Molonglo on the eastern side of the Narrabundah range and its tributary spurs; more restricted sheltered area lies on the east of Black Mountain.

(v.) *Range of View.* (*a*) *North of the Molonglo River.* Looking from the more elevated points on the northern site of the Molonglo River—such as Vernon Trigonometrical Station—towards the north, the view extends over a very gently undulating valley for some miles to the low range of timbered hills forming the northern boundary of the territory. Mount Ainslie, Black Mountain, and Majura, rising some 900 feet above the general level, are prominent features in the landscape.

Looking to the west and south-west through the gap between Black Mountain and the spurs from Red Hill on the Narrabundah Range, successive ranges are visible, in which there are various peaks attaining an altitude of from 4000 to 6200 feet above sea-level; these peaks are frequently snow-clad during the winter months. In the middle distance there are undulating pasture lands, relieved by the timbered slopes on either side of the Molonglo River, and by hills of pleasing contour rising some 500 feet above the general level. In the foreground flows the Molonglo River, bordered by willows. Southerly the view is limited by the Narrabundah Range, but towards the south-east the outlook extends over the alluvial reaches of the Molonglo as far as the timbered ranges lying to the east of the Goulburn-Cooma railway.

(*b*) *South of the Molonglo River.* On the south of the Molonglo, looking from Camp Hill, the view towards the north is somewhat similar to that from Vernon Trigonometrical Station, but here the Molonglo is in the foreground and its winding course can be traced on either hand for many miles. In the middle distance the Canberra church and parsonage, encircled by well-grown plantations, are prominent objects. Turning towards the north-east, the scene is varied; near the foot of Mount Ainslie lies Duntroon homestead with its garden and ornamental grounds; beyond the homestead glimpses of farms with undulating pastures are obtained, while the forest-clad ranges on both sides of the Molonglo form an effective background. Towards the east and south-east the country is of graceful contours with here and there a farm, the Goulburn-Cooma railway in the distance ascending the lower spurs springing from the main Dividing Range. Looking to the south, Mugga Mugga stands out prominently, and the Narrabundah Range as far as Red Hill limits the view.

4. **Geology of Capital Site.**—A geological survey of the site selected for the capital city has been carried out. The rocks composing the site consist of a somewhat contorted and folded sedimentary series of sandstones and quartzites, shales, slates, limestones, and volcanic tuffs. Igneous intrusions occur, consisting principally of quartz-porphyries and quartz-felsites. The sedimentary rocks, more especially the limestones, contain fossil corals, brachiopoda, and trilobites, indicating the age as Upper Silurian.

(i.) *Sandstone and Quartzite.* One of the most noticeable features of the city site is the occurrence of thick beds of buff-coloured sandstone, which occupy a considerable area, including Black Mountain at the north-west corner of the site. These sandstones have been used locally to some extent for building, for which purposes they are not, however, of first-class quality. Small quarries have been opened only in two or three places, and therefore the question as to whether a better quality of building stone is obtainable or not cannot be said to have been definitely decided.

Near their contact with the intrusive igneous rocks (referred to hereinafter) the sandstones have been transformed into dense quartzites, and all traces of their bedding planes have been entirely obliterated.

(ii.) *Shales and Slates.* Interbedded with the sandstones are certain thin-bedded shales, which, for the most part, are yellow, but in places, owing to the presence of peroxide of iron, they assume a chocolate colour. Deposits of bluish fissile slates also occur within the city area. So far as can be seen by their limited exposures these slates are not of sufficiently good quality to be utilised as roofing slates, though it is probable that careful prospecting may result in the discovery of deposits suitable for door-steps, paving stones, and other analogous purposes.

(iii.) *Limestones.* Beds of limestone are numerous within the city area and the surrounding territory, though none of the individual deposits is remarkable for its thickness; the most extensive in regard to length occurs along the northern slope of Red Hill, while the thickest beds observed are on the northern side of the Molonglo River. Most of these limestones appear, from their analyses, to be of good quality for the manufacture of mortar and hydraulic cement.

(iv.) *Calcareous Tuffs.* In proximity to the limestones of Red Hill occur beds of a calcareous tuff, which presents features of some interest. It consists of a dense, fine-grained, bluish rock of considerable hardness, which presents a banded and much corroded appearance when weathered. Analyses of several samples of this rock shew that it contains various proportions of carbonate and silicate of lime, so that it may be regarded as a more or less siliceous substance. This fact has suggested the possibility of the tuff being useful in connection with the manufacture of hydraulic cement.

(v.) *Crystalline Tuffs and Lavas.* At the north-eastern corner of the site there is a complex area (including Mounts Ainslie and Russell) consisting of crystalline volcanic tuffs, tuffaceous shales, and lavas; some of these tuffs are very coarse in texture, containing angular inclusions up to an inch in diameter, while others are almost indistinguishable from the quartz porphyries which are imbedded in them.

(vi.) *Igneous Rocks.* A well-defined belt of igneous rocks, principally quartz-porphyries and quartz-felsites, stretches from north-west to south-east across the city area. These, intruding the sedimentary series, tilt and contort the beds, and convert the sandstones in many places into quartzites. The quartz-porphyry has characteristics which will make it valuable as an ornamental building stone. The matrix is of a dark bluish-green colour, and is interspersed with crystals of quartz and felspar, and is similar in texture, hardness, and durability to a medium-grained granite. It appears probable that Mount Mugga Mugga will be the most suitable locality for a quarry, having in view the quality of the rock at that place and its proximity to the centre of building operations.

(vii.) *General Suitability.* Finally it may be said that the general geological conditions of Canberra are favourable for the purposes of city construction. The prevailing rocks are, without exception, suitable for the foundations of heavy structures, and would offer no insuperable difficulties in the construction of tunnels and pipe-lines for sewerage, or of surface reservoirs for water-supply purposes.

5. **Meteorology.**—Meteorological observations have not been taken on the capital site itself over a sufficient number of years to enable a proper appreciation of climatic elements to be arrived at. At Queanbeyan, however, which is only 8 miles distant from the capital site, rain records have been taken since September, 1870; at Duntroon since 1896; and at a number of other places near the capital site for various periods. Particulars of rainfall and temperatures, as recorded at Queanbeyan, have already been given in this book (see page 111).

(i.) *Rainfall.* The average rainfall for the whole of the Federal territory has been computed by the Commonwealth Meteorologist to be 25.5 inches, or about that of Melbourne or London. The following table gives particulars of the rainfall recorded at several places near the capital site:—

COMMONWEALTH SEAT OF GOVERNMENT.—RAINFALLS RECORDED AT PLACES NEAR CAPITAL SITE.

Station.	No. of Years.	Average.	Greatest.		Lowest.	
			Year.	Amount.	Year.	Amount.
		Inches.		Inches.		Inches.
Duntrooon	13	18.73	1900	28.94	1902	11.09
Kiandra	35	64.04	1889	90.06	1908	42.18
Lake George	25	27.00	1887	42.11	1908	15.90
Queanbeyan	39	22.63	1887	41.29	1902	10.42
Red Hill	23	33.93	1887	49.66	1902	18.94
Uriarra	15	32.92	1887	54.11	1899	20.00

The highest recorded average rainfall within the Federal territory is 32.92 inches at Uriarra, and the lowest, 18.73 inches at Duntroon. It is stated, however, that neither of these records can be accepted as accurate. At Queanbeyan the average rainfall is 22.63 inches; as much as 41.29 inches were registered at that place in 1887, and as little as 10.42 inches in 1902, a range of over 30 inches. The average rainfall in the city site itself is estimated to be 21.80 inches per annum. This equals or exceeds that recorded at the following places:—Berlin, Budapest, Christiania, Copenhagen, Madrid, Marseilles, Moscow, Naples, Paris, San Francisco, Stockholm, St. Petersburg, and Vladivostock.

No official records have been taken within the Cotter catchment area, but it is estimated that the average rainfall cannot be less than from 40 to 60 inches per annum, since Kiandra, which is only a few miles distant, has an average of 64 inches and is exposed to the same rain-bearing winds, while it has the disadvantage of being some 500 to 1000 feet lower than many of the peaks which serve as condensing or precipitating agents for the Cotter River. If the records of Kiandra can be taken as a guide, it follows that the precipitation on these higher levels does not suffer the extreme annual variations to which the lower levels of the Federal territory are susceptible, so that the flow of the Cotter River may reasonably be regarded as both fairly uniform and constant.

(ii.) *Temperature and other Matters.* The meagre temperature data so far obtained over the capital site leave many phases of weather inconclusive. Taking Queanbeyan as representative, the mean annual temperature may be assumed to be 55° Fah., the summer mean 68°, and the winter 42°. The maximum shade temperature recorded at Queanbeyan is 104°, the minimum 11° Fahr.; the ordinary summer temperatures are high, while the nights are invariably cool. During winter the temperature frequently falls below freezing point; the minimum record for 1910 is 26°, but that winter was exceptionally mild. The prevailing winds during the winter months are from points west of the meridian, and since those from the south, south-west, and west pass over the snow-clad Alps, they are keen. During the summer, hot winds from the west and north-west alternate with cool winds from the south, while the frequent north-east winds from the ocean are refreshing and serve to modify the summer temperature. It is rare for snow to fall within the city site, and still more rare for it to remain unthawed for more than a few hours after sunrise. Fogs are neither frequent nor dense. Observations of evaporation, and other climatic elements are not available for a sufficiently long period in order to form a reliable estimate of normals, other than those of rain and temperature.

A meteorological station was established in 1910 on the capital site and the following instruments installed:—evaporation tank, thermograph, barograph, hygrograph, aspirator, rain gauge, anemometer, and sunshine recorder.

6. **Vegetation.**—The timber line in the Federal territory is a fairly well marked feature, and, in the neighbourhood of the city site, roughly corresponds to the 2000 feet

contour. Below this line the country is open and almost without timber—partly naturally, and partly artificially. Above the line the country is generally timbered with eucalypts of moderate size.

One of the most urgent matters in connection with the Federal territory is that of re-afforestation. The steep slopes of many of the ridges are covered with loose material composed of a mixture of boulders and soil. This is held together normally by the tree roots, and nourishes not only the trees, but also a certain amount of pasture. After the trees have been ring-barked and cut down the roots decay, and there is nothing to prevent the loose soil washing down into the gullies. Owing to the destruction of the timber in many places on the steep face of the west bank of the Murrumbidgee, the soil is washed away too quickly for grasses to grow. The waters rush down rapidly to the creeks and bring about an alternation of floods and dry creeks, instead of more normal conditions. The discolouration of the Molonglo River is also largely due to ring-barking within the catchment area. The question of the re-afforestation of the Federal territory is under consideration, and is referred to hereinafter.

7. **Soils and Agriculture.**—The rocks which usually afford the richest soils—shales and basic rocks—are not present in notable quantity. Hence the country is chiefly a pastoral one. Wheat is, however, grown along the river banks, especially to the south of the Molonglo, and loads of potatoes are brought in from the Paddy's River area. Maize is grown successfully, and dairy farming is carried on to a limited extent.

There are considerable areas of gently undulating land well adapted for fruit-growing, and with proper cultivation ordinary farm crops could be profitably grown; apparently holders have found it easy to make a living by grazing and have, therefore, avoided as far as possible the more strenuous life that cultivation demands.

There is but little mining carried on within the territory. A copper mine near Bullen has been worked intermittently, and there are some old alluvial gold workings near the north-east corner of the city site. The similarity of the conditions prevailing at Canberra and at Pambula (near Twofold Bay), where rich chutes of gold have been extracted, suggests the possibility of workable deposits of gold occurring in the felsite rocks at the first-named locality.

It is intended to encourage farming in suitable districts by persons having small means, and to cultivate small irrigated holdings by the conservation of the waters of the Queanbeyan and Molonglo Rivers, which have a combined catchment area of 580 square miles. By this means it is proposed to employ a considerable agricultural population on the soil at various branches of industry, including agriculture, mixed farming, fruit-growing, and market gardening.

The present Government proposes not to alienate any of the lands in the territory, either within the city area or outside it, but to lease them on reasonable terms. It is anticipated that the revenue to be derived from these rentals in the earlier stages will total £30,000 a year, but with the development of the city, the rent-roll will be considerably augmented.

Over practically the whole of the city area the soils contain a large percentage of sand, and, though rarely of high quality, they give satisfactory results with careful treatment; the land is usually well drained naturally, and there is an almost total absence of marsh.

8. **Jervis Bay.**—The territory on the south side of Jervis Bay acquired by the Commonwealth includes (*a*) an area of about two square miles as described in the first schedule to the Seat of Government Acceptance Act 1909; (*b*) an area of 132 acres, known as Bowen Island, described in the same schedule; and (*c*) six other areas aggregating 2270 acres, also described in the schedule. The New South Wales Government has been

officially requested to agree to the extension of these areas for the reasons (*a*) that it is requisite to secure further lands on the coast line for the purposes of efficient defence, and (*b*) that it is desirable that the Commonwealth should have proprietary rights over the catchment area of Telegraph Creek and other adjacent lands.

The entrance to Jervis Bay, between Bowen Island and Point Perpendicular, is 1¾ miles in width. The main Federal territory is situated on the southern side of the bay, at what is known as Darling Road, where there is a good anchorage on a sandy bottom, carrying a depth of from 6 to 11 fathoms of water at low-water spring tides. The 5-fathom line comes close up to the shore, and there is nothing less than 11 fathoms thence to the ocean. The sheltered area of Darling Road may be taken to be about 1½ square miles, and it affords an excellent shelter for vessels of even the largest draught.

§ 4. Administration and Organisation of Services.

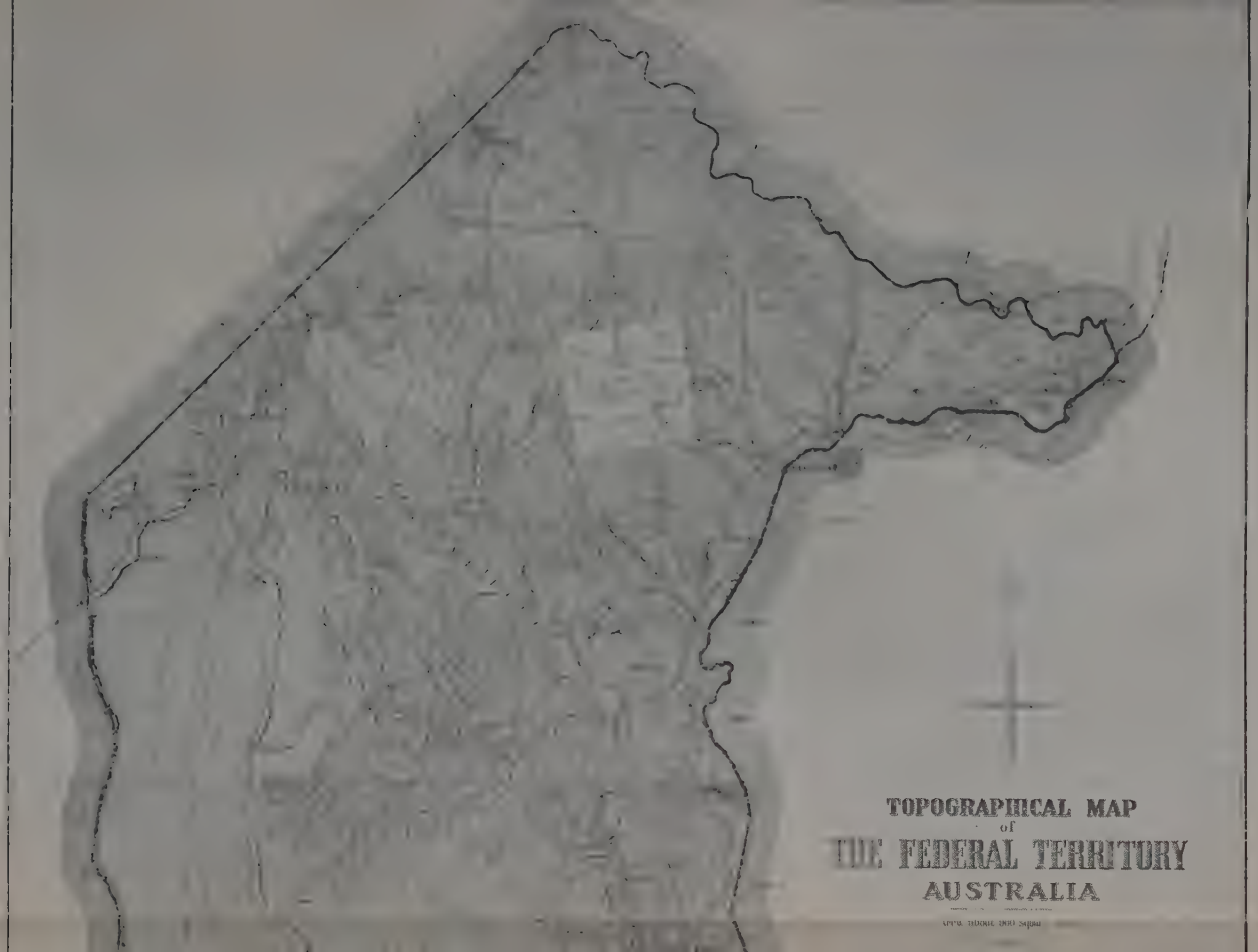
1. **General.**—By section 6 of the Seat of Government Acceptance Act 1909, it is provided that all laws in force in the Commonwealth territory, at the date of acquisition by the Commonwealth, shall, so far as applicable, remain in force until other provision is made. Power is given to the Governor-General to exercise certain functions hitherto vested in the Governor of New South Wales, subject to the proviso that the Governor-General may direct that any such function shall be exercised on behalf of the Commonwealth by the authorities of the State in whom it was previously vested. Before issuing the proclamation actually effecting the acquisition of the territory it was thought desirable to make further provision for the administration of the territory by the Commonwealth. The Seat of Government (Administration) Act was accordingly passed in November, 1910.

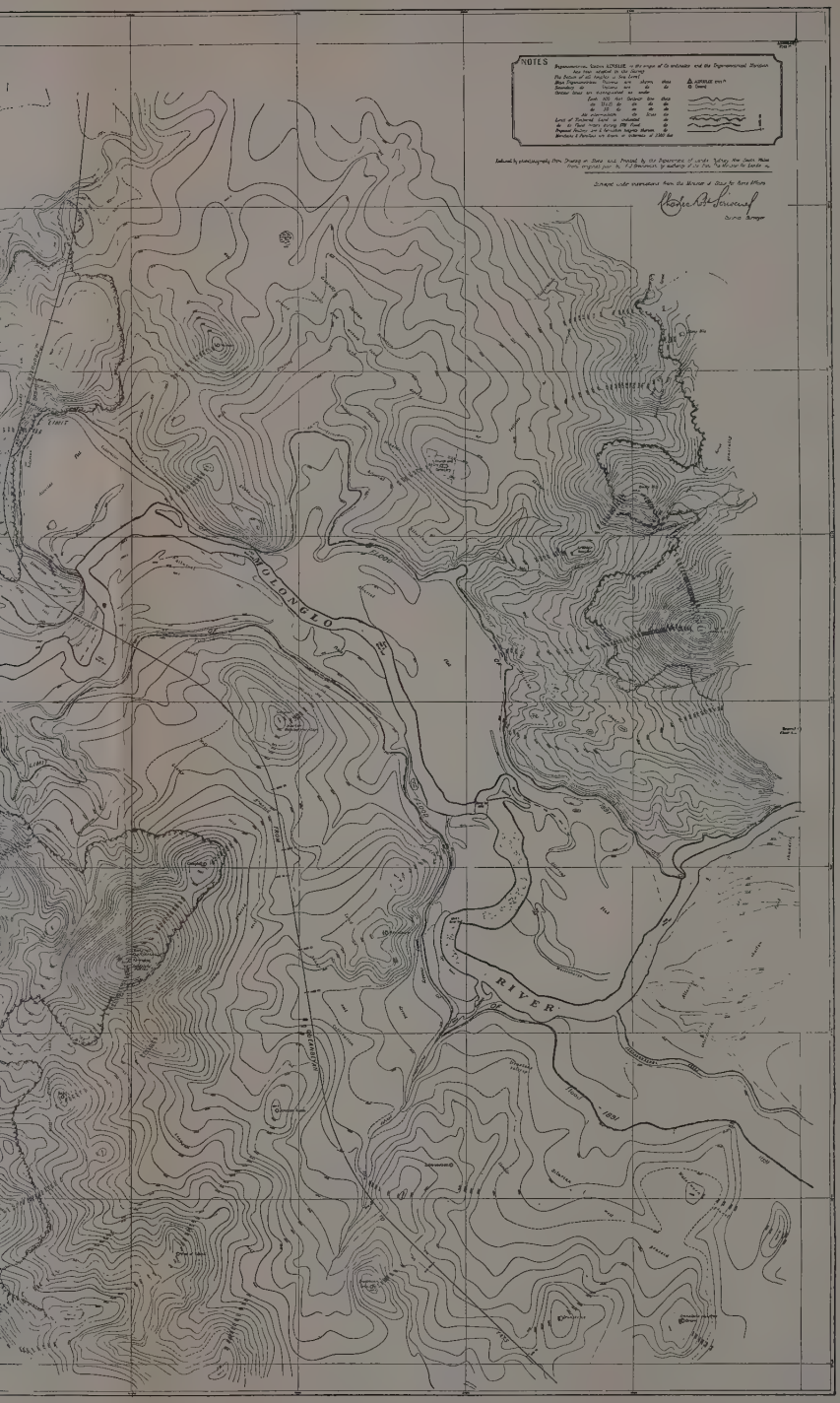
2. **The Seat of Government (Administration) Act 1910.**—This Act, which came into force on the 1st January, 1911, provides for the government of the territory and deals with the following matters:—(*a*) *Ordinances.* The Governor-General is authorised to make ordinances having the force of law in the territory, either House of Parliament being empowered, however, to disallow any such ordinance by passing a resolution to that effect. (*b*) *State Acts.* It is provided that certain State Acts should not continue in force in the territory. These Acts are as follow:—The Conciliation and Arbitration Act 1899, the Industrial Disputes Acts 1908 and 1909, the Local Government Acts 1906 to 1908, the Country Towns Water and Sewerage Act 1880, and all acts imposing rates, taxes, or duties (except duties on the estate of deceased persons). (*c*) *Commonwealth Acts.* It is also provided that the following Commonwealth Acts should apply within the territory:—The Commonwealth Conciliation and Arbitration Acts 1904 to 1910, the Australian Industries Preservation Acts 1906 to 1909, and the Secret Commissions Act 1905. The rates of postage and for telegrams are the same as if the territory were still part of New South Wales. (*d*) *Crown Lands.* The freehold of any Crown lands in the territory cannot be sold or disposed of except in pursuance of some contract entered into before the 1st January, 1911. (*e*) *Jurisdiction of Inferior Courts.* The inferior courts of the State of New South Wales exercise the same jurisdiction as they had before the commencement of the Act.

3. **Ordinances.**—Up to the end of March, 1911, only one ordinance had been made under the provision referred to above. This ordinance, which came into operation on the 1st January, 1911, deals with the provisional government of the territory. It directs that the State laws are to continue to be administered by the authorities of the State, and that magistrates, gaolers, and police are to be deemed to be officers of the territory. No new


LOCALITY PLAN
OF
FEDERAL TERRITORY
NOTE
Railways shewn thus
Federal Territory
NEW SOUTH WALES
VICTORIA
Maitland
NEWCASTLE
ORANGE
Bathurst
Lithgow
L. Verpool
Port Jackson
SYDNEY
Bulli
Crookwell
Goulburn
Yass
Nowra
Jervis Bay
Narrandera
Junee
WAGGA
Deniliquin
ADELONG
TUMUT
QUEANBEYAN
Kiandra
Batemans Bay
Moruya
Cooma
Echuca
KERANG
Wangaratta
Beechworth
Benalla
Bright
BENDIGO
CASTLEMAINE
Nneton
Mansfield
Omeo
Dalgety
B. Biega
BOMBALA
Twofold Bay
Green Cape
Cape Howe
Gabo Is
BALLARAT
Maryborough
Creswick
MELBOURNE
Cranbrook
PORT PHILLIP
GEELONG
Inverloch S.
Bairnsdale
Sale
Lakes Entrance
Cunninghame
C. Conran
C. Everard
Rame Hd
C. Schanck
Arthurs Seat
Portsea
Queenscliff
Torquay
C. Otway
C. Liptrap
Port Albert
Wilson's Promy
Scale of Miles
0 12 24 36 48 72 96 120


HALL
CANBERRA
Molonglo
QUEANBEYAN
Queanbeyan
River
CAPTAINS FLAT
Yass River
River
FEDERAL CAPITAL TERRITORY


TOPOGRAPHICAL MAP
of
THE FEDERAL TERRITORY
AUSTRALIA


NOTES
MOLONGLO
RIVER

license to sell intoxicating liquor in the territory may be granted; any existing publican's license may, however, be renewed from time to time for the same premises.

It is proposed to pass Commonwealth Acts providing a complete scheme for the government of the territory, as the opportunity and necessity arise. In the meantime it is intended to make other ordinances at an early date dealing with various urgent matters; it is understood that the first of these will relate to the local government of the territory by the Commonwealth.

4. **Financial and Other Arrangements.**—A trust fund, to be designated the Federal Capital Territory Account Trust Fund, is to be created by statute. Into this fund all moneys collected by the New South Wales Government on behalf of the Commonwealth in connection with the Federal territory will be paid. Disbursements on account of operations in the territory will be made out of this account, subject to appropriation by Parliament.

In order to enable the Commonwealth to undertake the administration of lands, roads, forests, mines, and allied services, now being conducted by the State on behalf of the Commonwealth, steps have been taken to obtain (*a*) certified copies of the registers of the State Lands Department, with full particulars relating to every area of land within the territory; (*b*) certified copies of every measured portion of land in the territory, and of all plans thereof deposited in the Government offices; (*c*) copies of the registers of the Yarrolumla shire shewing every holding within the territory, these being required before any scheme of municipal taxation can be introduced; and (*d*) information relating to land tenure and Local Government Acts of the State.

5. **Scheme for Organisation of Services.**—In January, 1910, approval was given by the Minister of State for Home Affairs of a general scheme for the organisation of services under the Seat of Government Act 1908, and the Seat of Government Acceptance Act 1909. This scheme provides for responsibility to the Minister for the administration of the various Acts to be passed in connection with the territory and the city, for the general management, for the conduct of operations, for orders, and for the receipt of intelligence.

(i.) *Administrative Arrangements.* It is proposed to divide the administrative arrangements into two sections:—(*a*) The drafting of Bills and the administration of Acts relative to city, lands, mines, agriculture, forests, stock, justice, police, education, health, works, roads, buildings, transport (including railways), power, lighting, water, sewerage, bridges, rivers, parks, harbour, observatories, and miscellaneous; (*b*) the other section of administration covers general management, embracing correspondence, records, stores, finance, revenue, and expenditure.

(ii.) *Executive Arrangements.* The primary division of the executive section of the services provides for (*a*) lands, (*b*) works, and (*c*) scientific. (*a*) *Lands.* The lands section has been placed under the control and supervision of the Director of Commonwealth Lands and Surveys, and embraces all survey operations regarding city, triangulation, engineering, territorial boundaries, topographical, roads, railways, and miscellaneous. That officer is also charged with duties relating to Crown lands, valuations, acquisitions, leases, roads, parks and reserves, agriculture, mines, and forests. (*b*) *Works.* The Public Works section of the scheme has been placed under the control and supervision of the Director-General of Works, who advises on professional matters respecting the design, construction, and maintenance of works. These works embrace public buildings, water, power, lighting, sewerage, roads, bridges, railways, and tramways. (*c*) *Scientific.* It is proposed to place scientific services under the control of a Director, who will advise the Minister respecting the various observatories which will be established in connection with the Federal capital, such as astronomy, solar physics, meteorology, etc.

§ 5. Surveys.

1. **General.**—After the acquisition of the territory and the selection of the city site, the first step to be taken towards the establishment of the capital city is the carrying out of a large number of necessary surveys. These comprise (*a*) contour surveys; (*b*) triangulation survey of the territory; (*c*) demarcation of the boundaries of the territory and the catchment areas; (*d*) engineering surveys for water-supply, sewerage, roads, bridges, and other associated objects; (*e*) topographical or feature surveys of the territory and of the catchment areas of the Molonglo and Queanbeyan Rivers, comprising in all an area of about 1480 square miles; (*f*) road surveys; (*g*) surveys in connection with the Yass-Queanbeyan railway; (*h*) demarcation of boundaries of lands at Jervis Bay; (*i*) surveys in connection with the railway line to connect the capital city with Jervis Bay, and the establishment of a harbour at Jervis Bay; (*j*) redetermination of boundaries of privately-owned properties in the territory; (*k*) preparation of plans and descriptions of the whole of the foregoing surveys. These surveys are being carried out under the direction of the Commonwealth Director of Lands and Surveys.

2. **Astronomical Observatory.**—In connection with these surveys it is in the first place important to observe that the site for an astronomical observatory has been located on the summit of a range of hills, known as Mount Stromlo, about 6 miles south-west of the city site, and situated symmetrically with regard to the eastern and western boundaries of the territory. The primary object in fixing this site is the determination of the initial meridian, to which all surveys, including not only those within the Federal territory but also ultimately throughout Australia, will be referred. A point on the summit of this range has been determined as the origin of all co-ordinates for the surveys which are to be carried out.

The site on Mount Stromlo was selected after due consideration of the conditions essential for the efficient employment of powerful astronomical instruments during the greater part of the year, viz., uninterrupted horizon, clear skies, transparency and steadiness of atmosphere, and freedom from dust, smoke, and frequent atmospheric disturbances. The elevation of the site—about 2570 feet above sea-level and 600 feet above the surrounding country—secures an uninterrupted horizon. On the top of the range there is ample room for the location of several observatories, and taking into account the advantages of the site—such as its relative remoteness from sea influences, the moderate gradient of the slopes on all sides, the nature of the soil and vegetation, and the aspect and general topography of the surrounding country—the elevation of 2600 feet is considered to probably afford a sufficient degree of atmospheric purity.

There are ranges some 20 or 30 miles to the south-west of the capital site having an elevation of from 4000 to 5000 feet, but the difficulty of obtaining access to these higher levels outweighs any advantage which the additional elevation might be expected to give.

Arrangements are being made for the erection on the site of a temporary observatory to house an equatorial telescope, having a 9-inch objective, in order to test the efficiency of the site by actual observations of astronomical and meteorological phenomena, extending over a period of at least twelve months.

3. **Progress of Surveys.**—As may be seen below a considerable amount of work has already been done in regard to the surveys which are to be carried out.

(i.) *Contour Surveys.* The first contour survey was carried out in 1909 and extended over an area of about 35 square miles; the object of this survey was to give a general idea of the character of the country about the city site. A close

contour survey, with vertical intervals of five feet, has now been carried out over the area embraced by the city site, for the purpose of enabling designs for laying out the city to be prepared. This survey has recently been extended beyond the city site so as to include the areas proposed for the water-supply reservoirs and pipe-line and sewerage-treatment works, as well as the sites for weirs on the Molonglo River. A model of the city site on a scale of 400 feet horizontal and 100 feet vertical has been prepared. Casts of this model will be sent to each of the centres from which information is to be distributed to intending competitors for the premiums offered for designs for laying out the city (see § 6, para. 5 hereinafter).

(ii.) *Triangulation and Demarcation of Boundaries.* The triangulation of the territory and the demarcation of boundaries are now being conducted, and it may be observed that an arrangement has been made with the Government of New South Wales under which the common boundaries, as determined by the Commonwealth Director of Lands and Surveys, will be accepted by both Commonwealth and State. The triangulation of the territory will be intermittent, and surveyors will be detailed for that work as circumstances warrant. Similarly, topographical work will not be continuous, but will be carried out, when the more urgent surveys have been completed.

(iii.) *Surveys for Engineering Works.* The surveys in connection with engineering works for water-supply and sewerage have been made, and investigations are in progress with a view to determining the characteristics of certain sites which it is proposed to utilise for reservoirs, weirs, and other engineering purposes. A survey has also been carried out for a road from the foot of Mount Stromlo to the observatory site on the summit. This road is to be constructed at an early date with a length of 2¼ miles and a ruling gradient of 1 in 20. Other surveys recommended by the Director-General of Works in connection with roads and bridges are also being carried out.

(iv.) *Railway Surveys.* A preliminary survey has disclosed a practicable route for a railway from the capital site to the Goulburn-Cooma line near Bungendore, with a ruling gradient of 1 in 75 and easy curves. This line will form part of the railway which will connect the capital city with Jervis Bay, as well as being the most direct route from the city site northwards, *i.e.*, to Sydney, Brisbane, etc.

a) Capital Site to Bungendore. The length of the line from the city site to Bungendore will be about 27 miles, of which 11 miles are within Federal territory and 16 miles in the State of New South Wales. It is estimated that the cost of construction of this line will be approximately £250,000 without equipment. The New South Wales Government has been invited by the Commonwealth Government to state the terms upon which they will be prepared to construct, equip, and maintain the line in such a manner as to conform to the standards of the State lines.

In order to provide transport facilities to the city site at an early stage in the operations, the original proposal was to connect the site with Queanbeyan, a distance of 9 miles. The line between Queanbeyan and Bungendore has, however, a gradient of 1 in 40 for more than 7 miles and curves of 12 chains radius, with short intervening straights extending over 2½ miles. Disregarding the question of cost and interest on capital expenditure, the deviation to Bungendore would therefore place the railway transport to the city site on a more satisfactory basis than would exist by connection with Queanbeyan.

(*b*) *Yass to Queanbeyan.* Reference has already been made (see page 1138) to the provision in the agreement between New South Wales and the Commonwealth for the construction of this line, which would pass through the Federal territory near the city site. A location survey of the route for this line is in progress, and the permanent marking of part of the line, which will pass through the Commonwealth territory, has been completed.

(c) *Railway to Jervis Bay.* A route for a railway to Jervis Bay, connecting with the line from the city site to Bungendore, has been selected, and location surveys are to be carried out. The length of the proposed line is approximately 96 miles, with a ruling gradient of 1 in 50 and curves of 12 chains radius as a minimum. The only bridges of any size will be those across the Shoalhaven and Mongarlow Rivers; smaller bridges will be required crossing Reedy and Durra Durra Creeks and the Coorang River. The descent towards Jervis Bay is gradual, the highest point being at the departure from the Goulburn-Cooma railway at 2550 feet above sea-level.

4. **Determination of Boundaries and Particulars of Land Tenure.**—Amongst other matters which are in train may be mentioned the valuation of privately owned properties lying within the territory, with reference to which the New South Wales Government has furnished a detailed statement shewing the nature of each occupation together with certain information in the possession of the State Department bearing upon the values of the properties. Particulars regarding the tenure of land within the Federal territory are given in the following table :—

COMMONWEALTH CAPITAL TERRITORY—PARTICULARS OF TENURES OF LAND, 1911.

Particulars.	Alienated.	In Process of Alienation.	Leases and Licenses.	Unoccupied.	Total.
Area in acres ...	163,447	147,180	195,033	67,021	572,681

§ 6. The Building of the City and Associated Matters.

1. **Preliminary Measures.**—Whilst the foregoing survey operations are being performed and the designs for laying-out the city are being prepared (see paragraph 5 hereinafter), it is proposed that the preliminary schemes for workmen's habitations, water-supply, sewerage, and other necessary works should be carried out for the necessities, not only of the city itself in its earlier stages, but also for the large number of persons who will be engaged on its construction.

(i.) *Accommodation of Workmen.* Arrangements for housing the employees engaged on the preliminary works and for controlling the area occupied by them are being made. At present the officers engaged in the surveying work under the direction of the Director of Commonwealth Lands and Surveys are established in camps. For the purpose of providing in a suitable position an area upon which these officers and other persons engaged in the establishment and construction of the city will reside, the estate known as Acton, covering an area of 1780 acres on the north side of the Molonglo River, has been acquired. This area was selected with due regard to hygienic conditions and to protection of the site from pollution. During the earlier stages, workmen will probably be distributed on engineering works away from the city site, but from the time when construction within the city begins, there will be an aggregation of a considerable number of men, their families, and dependents.

When this stage arrives, it is proposed to lay out the area referred to as a semi-permanent village. The streets will be formed and drained; cottages erected for married men and families; and accommodation provided for single men. Immediate steps are to be taken for the erection of offices and quarters for the staff. It is also proposed to

establish a general store, where all consumable supplies may be purchased. A hospital is also to be provided and equipped, the medical officer in charge to act also as health officer. The establishment of a Government hotel and the provision of schools for the education of children are also in view.

(ii.) *Transport.* Steps are to be taken for the early construction of a railway connecting the capital site with the Goulburn-Cooma line, either at Bungendore or at Queanbeyan. The construction of such a line will facilitate the supply of materials, plant, stores, and provisions, and will thus decrease the cost of engineering and building construction, and of workmen's living. In the initial stages it may be found necessary to construct a tramway from Queanbeyan for transport purposes until the railway is opened, such tramway to follow the route of, and be a permanent step towards, the line connecting Yass and Queanbeyan. The formation of main roads and deviations, and the maintenance and repair of existing roads and bridges for the transport of material required in connection with the earlier engineering projects, is to be taken in hand immediately. The roads in use in the territory are approximately 200 miles in length; about one-half of these are formed and gravelled in parts, the other half having natural surface with slight formation. There are four bridges—two each over the Murrumbidgee and Molonglo Rivers—constructed of timber. The main roads are to be reformed and gravelled or metalled; the necessary road-making plant is being purchased. A sum of £8000 has been made available for expenditure during the current financial year on road maintenance, and a further sum of £540 has been provided for the construction of a road to the observatory site on the summit of Mount Stromlo. A scheme is to be prepared for an efficient system of roads, throughout the Federal territory, radiating from the city site.

(iii.) *Water-supply and Sewerage.* It is proposed that a provisional scheme for water-supply and sanitation should be carried out at an early date, so that the men who will be engaged on the construction of the permanent water-supply and sewerage systems, of roads, bridges, railways, and other works, will be provided for in a manner which will meet all requirements in the direction of health, and which will not in any way interfere with the site upon which the capital itself will eventually stand. At a later stage, when these permanent works are sufficiently advanced and when construction within the city site commences on a large scale, a water-supply system will probably be adopted so as to form a permanent step towards the water-supply of the city upon official occupation. Similarly, in regard to sewerage, at first the arrangements will probably be more or less of a temporary nature, but it is proposed that the engineering works should be pushed so far ahead before building operations in the city are commenced, as will admit of a location being assigned for workmen, which will, in course of time, become a sewage district for the city extensions. The question of water-supply for afforestation will also receive early consideration.

(iv.) *Afforestation.* It is proposed to take steps at an early date for the afforestation of that part of the territory contiguous to the city site, in such a manner as not to interfere in any way with the design of the city. By being planted and properly laid out at an early date, the trees will be in a forward state by the time the capital city is ready for occupation. The scheme includes the growth of trees for scenic and ornamental purposes, for the prevention of the erosion of the banks of rivers and creeks, and for shelter. It appears probable that concurrently with the foregoing operations it will be found advantageous to commence some of the constructional works for the lake which is to be formed by utilising the waters of the Molonglo River at the capital site. It is proposed to obtain expert advice as to a scheme of afforestation and to establish local nurseries for the trees which will be used.

(v.) *Materials.* Steps are being taken with a view to the supply of local materials as far as possible. Shafts have been sunk and samples of shale, which it is thought will be

suitable for the purpose of brick making, have been obtained. Tests of these samples are being carried out in Sydney and Melbourne, and the establishment of brickworks is awaiting the results of these tests. The type of brick being made is the machine-made brick, treated by the semi-dry process. It is estimated roughly that ninety million bricks will be required for the public buildings; the delivery of these will probably be accomplished within six years after the erection of the brickworks, *i.e.*, at the rate of fifteen million bricks per annum. It is stated that there will be no difficulty as to the volume of shale available. Reference has already been made (see § 3, para. 4.) to the nature of the building stone available in the territory; further investigations are to be made. Granite occurs in large quantity over a great part of the territory; none has yet been used for buildings, but it is probable that, with the demand created by the establishment of the capital city, suitable quarries will be opened, while the porphyritic rock which outcrops frequently will no doubt provide valuable stone for ornamental purposes. Stone for road-making is abundant and quarries will be located; sand for building construction and pottery clays will be sought for. The question of the manufacture of sand lime bricks from local materials is under investigation.

Early steps will probably be taken for the delivery and seasoning of timber required for preliminary works. At a later date this scheme will be developed so as to provide the timber required for buildings in the city.

(vi.) *Power.* Power will be required in the early stages of the work for lighting, brickmaking, woodworking, pumping, possibly quarrying, and other purposes. It is therefore considered desirable that prior to the inception of active operations a power station should be installed to transmit electrical energy according to requirements. The project will be considered as part of a comprehensive scheme and will be installed in units.

(vii.) *River Gauging.* A complete system of river gauging throughout the territory and the catchment areas of the Molonglo and Queanbeyan Rivers is to be established.

2. **Probable Successive Stages of Works.**—A scheme, setting forth the proposed successive stages of the works involved in the establishment of the capital city, has been prepared by the Director-General of Works. Although the entire undertaking does not involve any one engineering work of great magnitude, it is necessary that the successive steps should be planned in such a manner that each may become a permanent step obviating temporary expedients. It is also necessary that the whole undertaking should be designed so that certain projects may initially form units or parts, which can be repeated or developed in course of time to meet increase of population. The probable stages in the evolution of the city, as set out hereunder, may overlap, and in some cases projects will continue through successive stages.

(i.) *First Stage. Transport, Materials, and Power.* Country roads and bridges; railway connection with Goulburn-Cooma line; brickworks; lime kilns; and timber (first instalment); generation and transmission of power for construction.

(ii.) *Second Stage. Hydraulic Engineering Works outside City Area.* Water-supply; storm-water drainage; sewerage outfall works; main sewer; sewerage district for workmen; timber (second instalment); railway bridge over the Molonglo River.

(iii.) *Third Stage. Engineering Works within the City Area preparatory to Occupation.* Street tunnels; power plant (permanent station and distribution); construction of housing for workmen; service reservoirs; and impounding weir on Cotter River.

(iv.) *Fourth Stage. Building Construction within the City and Completion of Engineering Works.* Public buildings (offices for use during construction); gasworks;

compensating weir on Queanbeyan River; railway to Hall (Queanbeyan to Yass line); impounding weir on the Molonglo for ornamental water; erection of public offices and buildings; erection of Parliament House; completion of city roads.

3. **Outline of Principal Projects.**—A provisional scheme has been formulated setting out the sequence of most of the important projects involved in the building of the city, together with the estimated time necessary for their design and completion, and their approximate cost. There are, however, certain matters which cannot be dealt with even provisionally at present—such as bridges over the Molonglo River and the impounding weir on that river for ornamental purposes—since the location and height of these will depend upon the level of the waters provided for in the accepted designs for laying out the city. Other important works, *e.g.*, the compensating weir on the Queanbeyan River, street tramways, the railway to Jervis Bay, and refuse destructor, are not included in the scheme, since it is considered that they are not essential for the first years of occupation. The scheme provides, subject to the approval and the appropriation by Parliament of the necessary funds, for the completion of the designs and buildings ready for occupation within a period of eight years.

(i.) *Water Supply.* There are two aspects of this matter, viz., one as regards workmen during construction, the other regarding the supply for the city. The former has already been referred to herein (see page 1151). It is proposed that a supply from the permanent source, the Cotter River, shall be provided before the time when there will be any considerable aggregation of workmen and dependents within the city area. In the meantime a supply of water will be provided for the men engaged on preliminary works, probably by pumping from the Molonglo River through sand filters into reservoirs. A weir has been erected on the Cotter River, and the discharge is determined by readings taken daily. The records thus obtained have confirmed the reports which have already been made to the effect that the capacity of the river is more than sufficient for the domestic and civic requirements of a population of 200,000 persons, based on an estimate of 100 gallons each per diem. A site for an impounding weir on the Cotter River has been selected at a place about one mile from the confluence of that river and the Murrumbidgee, and at a level of about 1560 feet. It is estimated that a weir at that place, 70 feet in height, will impound 800 million gallons of water; if the height were increased to 200 feet, the quantity impounded would be 4800 million gallons. The pipe line, after crossing the Murrumbidgee River, will lead to the pipe head reservoir on a hill near Mount Stromlo (2465 feet), thus necessitating a lift of about 800 or 900 feet. The proposed site for the service reservoir is at Red Hill (2300 feet), near the south-western boundary of the city site. It is proposed that the power for the pumping plant shall be transmitted electrically from the central power station.

(ii.) *Sewerage Scheme.* Various considerations demand that efficient measures should be taken to ensure the innocuous disposal of the sewage effluent. Any system adopted will involve land filtration, and the configuration of the country indicates the slopes of the Molonglo below (*i.e.* to the west of) the city site as the most suitable place for sewage treatment works. It is proposed that a system of bacteriological treatment combined with broad irrigation shall be adopted.

Until the designs for laying out the city are accepted, the lowest levels from which sewage will be taken cannot be determined, but it is stated that the engineering surveys, which have already been carried out, demonstrate that the areas available for irrigation by gravitation alone will be too small, and that pumping will be necessary. The lift required will, however, be small even to command a large irrigable area. The relative advantages of pumping the sewage or effluent are under consideration.

(iii.) *Power Supply and Distribution.* In distinction to a system under which independent power-generating units would be installed at various places—for example, at

the sewage outfall works and at the pumping station at the Cotter—the adoption of a central station scheme is of importance. It is proposed that the permanent central station shall consist of two generating units each of 500 kilowatts, and one spare unit. Until a proper water-supply is provided, the permanent power station cannot be erected. In the meantime, since power supply is necessary in connection with preliminary measures (see page 1152 hereinbefore), it is proposed to install the first unit in a temporary building on the bank of the Molonglo River, conveniently situated for condensing and feed water. When the permanent station is erected, the first unit will probably be moved from the temporary building and become part of the complete plant.

The question of the generation of electricity by water-power has received consideration. None of the rivers within the territory can be regarded as a suitable source for such power, because of the large capital outlay entailed for hydraulic headworks and the small horse-power which could be relied upon during successive years of drought. It is considered probable that in future years, when the population of the city has substantially increased, the current for a plant of large capacity could be economically generated by the utilisation of the waters of one of the rivers flowing outside the Federal territory.

(iv.) *Buildings.* The scheme provides for the sequence of designs and for the erection of public buildings without intermission, including the Governor-General's residence, Courts of Justice, police buildings and gaol, administrative offices, military depôt and offices, schools, observatory, medical and hospital buildings, railway station, Prime Minister's residence, accommodation for Members of Parliament, post office, Government printing office, and Town Hall. Other buildings will probably be erected within the first few years of, but not prior to, occupation, such as State House and necessary educational institutions. It has been decided that competitive designs should be invited for Parliament House after the design for laying-out the city has been selected (see paragraph 5 hereinafter). The plans will probably have to be designed in such a manner that initially the necessary buildings can be erected expeditiously and at moderate cost, and so as to form a permanent part of the whole design to be completed at a later date.

The scheme provides for the design and erection of public buildings only. It is proposed that buildings for commercial and residential purposes should be constructed by private enterprise, at a time when the engineering and other works of the city are considered to be sufficiently advanced.

(v.) *Gasworks.* It is considered that gas-supply for cooking and heating will be essential, and that such a supply will also be utilised to a large extent for lighting purposes. It is proposed, therefore, to produce a gas of calorific value suitable for modern lighting, as well as for heating and power. On the basis of available statistics regarding towns having both electric and gas supplies, the consumption for 20,000 people, including town street lighting, will be 80 million cubic feet per annum.

(vi.) *Compensating Weirs on Queanbeyan and Molonglo Rivers.* The proposal to construct a weir to impound ornamental waters in the city site will entail the erection of compensating weirs on the Queanbeyan and Molonglo Rivers. It is considered that the construction of one of the latter weirs should preferably precede that of the impounding weir at the city, and that it would be advantageous to first construct the weir on the Queanbeyan River. The area of the ornamental water will presumably be determined by the accepted city design, but in any case a constant flow of water will be required to maintain a definite level and to avoid so far as possible still waters in any arms or bays. The evaporation losses, deduced from the data obtained at Lake George, will be considerable, as also will be the loss by soakage. The requisite flow cannot be definitely stated until the extent of ornamental water is determined. In the meantime a weir is

being constructed to gauge the flow of the Molonglo at a reef near Yarrolumla station, so as to afford data by the time the designs for the city are under consideration.

(vii.) *Other Matters.* Other matters (in addition to the foregoing and to the preliminary measures specified in paragraph 1 hereof) dealt with in the scheme comprise lime-kilns, storm-water drains, military college, street tunnels, and city streets.

4. **Military College of Australia.***—This college has been established under the authority of the Defence Act 1910, to educate candidates for commissions in all arms of the Military Forces of the Commonwealth. A site within the Federal territory has been selected for the college at the Duntroon homestead, on the right bank of the Molonglo River, about seven miles from Queanbeyan, and near to the eastern boundary of the capital city area. The site, which comprises an area of about 370 acres, has a frontage to the Molonglo River, and has at present been leased by the Commonwealth for a period of two years with a right of renewal for a similar period. It will be possible to obtain within about twelve miles of Duntroon an additional area of country near the Murrumbidgee River suitable for encampment purposes, where field-artillery practice, field-firing, and other practical exercises can be carried out.

The homestead at Duntroon has been converted into offices for the administrative staff, orderly rooms, and quarters and mess-rooms for bachelor instructors. Temporary barracks and mess accommodation have been erected for the cadets, class rooms have been provided, and a parade ground constructed. The college is eventually to be connected with the water-supply and sewerage systems of the city; in the meantime temporary arrangements have been made.

(i.) *Cadets.* The establishment of cadets has been fixed at 150. The first batch will number thirty-three Australian cadets and ten from New Zealand, and will join in April, 1911. The next batch will go into residence in March, 1912.

(ii.) *Commandant and Staff.* The college is under the control of a Commandant. The staff consists of the following officers:—

MILITARY COLLEGE OF AUSTRALIA—STAFF OF OFFICERS, 1911.

Instructional.		Administrative.
Military.	Civil.	
2 Directors 6 Instructors	5 Professors 2 Lecturers	1 Adjutant 1 Quartermaster 1 Medical Officer

Warrant and non-commissioned officers will also be appointed.

5. **Designs for the Capital City.**—The Commonwealth Governmen is inviting competitive designs throughout the world for laying out the capital city, with the object of embodying in the construction of the Federal capital the most desirable features from the standpoint of general efficiency for its purposes, of engineering, hygiene, etc. The city will be the permanent seat of Government of the Commonwealth, the place at which the Federal Parliament will meet, where all Commonwealth legis-

* Compiled from information kindly furnished by Brigadier-General W. T. Bridges, C.M.G., R.A.A., Commandant of the Military College of Australia.

lation will be enacted, and where the Governor-General will have his official residence. It will therefore be primarily the official centre of the Commonwealth.

The creation of a capital is a unique opportunity, and it is hoped to reflect in the designs thereof the finest features of modern cities. The Commonwealth will have, as a precedent in the undertaking, the whole experience of the past in architecture and city planning. With the object of inducing experts of world-wide celebrity and reputation to place their talent at the disposal of the Commonwealth Government, it has been decided to award premiums of £1750, £750, and £500, respectively, for the three designs considered most meritorious. The whole of the necessary preliminary work, viz., survey and contouring, preparation of plans, etc., has already been undertaken, and the results are to be placed at the disposal of competitors; the conditions and particulars for the competition are accompanied by such plans, reports, and other exhibits as are necessary to enable the competitors to gain a full appreciation of all requirements. The information comprises historical notes, conditions of competition, requirements, general information, descriptive matter, and statistics relating to meteorology and climatology, together with contour, topographical, geological, and meteorological maps, a model of the city area, special reports, and also reproductions of landscape sketches taken from marked positions within the city site. The special consideration of designers is to be given to the allocation of appropriate areas suitably situated for public buildings and offices, and for commercial, residential, and industrial purposes, and it is expected that competitors will embody in their designs all recent developments in the art of town planning from the utilitarian, the architectural, the artistic, and scientific standpoints.

Information for the guidance of intending competitors will be available free of cost at the following places:—*Australia*: The Department of Home Affairs and the Public Works Department of each State. *New Zealand:* Public Works Department, Wellington. *Canada:* Public Works Department, Ottawa. *South Africa:* Public Works Department, Pretoria and Cape Town. *Paris, Berlin, and Washington:* The British Embassy. *New York and Chicago:* The British Consul-General. Applicants must establish their bonâ fides as intending competitors before being supplied with information.

SECTION XXXII.

MISCELLANEOUS.

§ 1. Immigration.

(A) The Encouragement of Immigration into Australia.

1. **Introduction.**—Various measures have from time to time been adopted by the Commonwealth and State Governments, as well as by private societies and individuals, with a view to promote the immigration of suitable classes of settlers into Australia. Some of the States of the Commonwealth are at present pursuing immigration policies of a vigorous nature; in others, relatively little is being done. The activities of the Commonwealth Government (which is vested with constitutional powers in regard to immigration under Sec. 51, xxvii., of the Constitution Act 1900) with respect to the encouragement of immigration have hitherto practically been confined to advertising in handbooks, newspapers, and periodicals, the resources and attractions of Australia.

2. **State Immigration.**—The advertising in the United Kingdom of the resources of the individual States has been carried out by their Agents-General in London. Various means have been adopted, including newspaper advertising; the publication of illustrated pamphlets bearing on the resources and principal primary industries of the State; lectures by officers who have a knowledge of the conditions prevailing in the State; official displays at the principal agricultural, manufacturing, and similar exhibitions; cinematographic pictures typical of industrial life and scenic views; and pictures and lantern slides.

(i.) *Nominated and Assisted Passages.* Arrangements have been made by most of the State Governments with several of the principal shipping companies for substantial reductions in the amounts of passage money to be paid by immigrants. These reductions are generally granted to all persons desiring to settle on the land or engaging in any form of rural industry, to domestic servants, and to any others who satisfy one of the several Agents-General in London that they will make suitable settlers. Provision has also been made whereby settlers may nominate their relatives or friends for passage to Australia at greatly reduced rates.

(ii.) *Reception on Arrival.* Immigrants whose coming is advised are met on board the vessel on arrival by Government officers, who make themselves acquainted with the needs of the passengers and assist and advise them in various ways. To those desirous of settling on the land, information and assistance is rendered by officers of the Lands Department, and special concessions are granted in respect of fares on the Government railways. In other cases endeavours are made to obtain employment for each applicant according to his special needs and qualifications.

(iii.) *Numbers of Immigrants.* Particulars of the net immigration to the Commonwealth are given on pages 131-3, and of assisted immigration on page 139, hereinbefore.

3. **Initiation of Commonwealth Scheme.**—For the financial year 1910-11 a sum of £20,000 was voted to the Commonwealth Department of External Affairs for advertising the attractions of Australia for settlers, farm workers, and tourists. The State Immigration Bureaux co-operate with the Department of External Affairs in keeping the High-Commissioner for Australia in London advised as to lands in the respective States available for selection, the openings for agricultural workers, and as to general information concerning matters of interest to intending settlers. A press advertising campaign has been initiated, the Commonwealth carrying on the general advertising of Australia by means of paragraphs and illustrated articles in British, European, and American publications, while the several States advertise for the class of immigrants they specially require. It is proposed that "landseekers' excursions" shall form an important part of the Department's operations. Bioscope films to be utilised for the illustration of lectures have been prepared, and handbooks for settlers and tourists, as well as folders, and other publications have been issued. Pictorial posters are also utilised.

4. **Visit of Scottish Agricultural Commissioners.**—In 1909 communications were entered into with Lord Pentland, Secretary of State for Scotland, relative to arranging for a visit to Australia of a number of prominent Scottish gentlemen interested in agriculture as land owners, farmers, Directors of Scottish Chambers of Agriculture, and also a number of men engaged in scientific agricultural education. Twelve Commissioners were nominated by Lord Pentland, and arrangements were made for them to tour the Commonwealth. The members of the Commission reached Fremantle on the 20th September, 1910, and, under the direction of a representative of the Department of External Affairs, proceeded to Queensland, and began an itinerary which took them throughout the principal agricultural districts and many of the pastoral districts of each of the States. The tour, extending over a distance of about 14,000 miles, concluded on the 19th January, 1911, when the Commission sailed from Fremantle. The Commissioners are submitting to the Commonwealth Government a report as to their observations, and the report will be circulated in the United Kingdom and elsewhere for the information and guidance of intending settlers and others.

5. **The High Commissioner for Australia and the Agents-General.**—Intending settlers or immigrants may, on application, obtain information from the High Commissioner for Australia—

THE RIGHT HON. SIR G. H. REID, P.C., K.C.M.G., ETC.
COMMONWEALTH OFFICES,
72 VICTORIA STREET,
LONDON, S.W.

Information regarding individual States may be obtained from the persons specified below:—

AUSTRALIAN AGENTS-GENERAL.

New South Wales	T. A. COGHLAN, Esq., I.S.O.	123-125 Cannon St., London, E.C.
Victoria ...	Hon. Sir JOHN W. TAVERNER, K.B.	Melbourne Place, Strand, London
Queensland ...	Major Sir T. B. ROBINSON, K.B.	Marble Hall, 409-10, Strand, London
South Australia	HON. A. A. KIRKPATRICK ...	85 Gracechurch St., London, E.C.
Western Australia	Sir W. NEWTON MOORE, K.C.M.G.	15 Victoria St., Westminster, London
Tasmania ...	Hon. JOHN MCCALL, M.D. ...	5 Victoria St., Westminster, London

(B) The Regulation of Immigration into Australia.

1. **Pre-Federal Restrictions.**—(i.) *Alien Races.* The several States of Australia had regarded it as desirable, long prior to Federation, to impose certain restrictions upon the admission of persons wishing to become inhabitants of those States. The influx of Chinese into the States, for example, was limited by stringent statutes, and later general Acts were passed in some of the States which had the effect of restricting the immigration of other—principally Asiatic—races.

(ii.) *Undesirable Immigrants.* Further restrictions were placed upon the admission of persons who were undesirable as inhabitants, either for medical or moral reasons, or who were likely to be an economic burden upon the community.

2. **Powers and Legislation of the Commonwealth.**—(i.) *Constitutional Powers.* By Chap. I., Pt. V., Sec. 51, xxvii. and xxviii. of the Commonwealth Constitution Act the Parliament of the Commonwealth is empowered to make laws with respect to immigration and emigration and the influx of criminals. (See page 39 herein).

(ii.) *Legislation.* The powers specified have now been exercised, and the laws passed in pursuance thereof supersede the State laws above referred to.

The first Act passed was the Immigration Restriction Act 1901, which contained provisions restricting the immigration of the classes of persons mentioned above. The clauses restricting the immigration of persons under contract were, however, repealed, and the Contract Immigrants Act 1905 was substituted therefor. (See page 50 herein.)

The Immigration Restriction Act of 1905 amends certain parts of the Act of 1901, and the immigration of alien races and undesirable persons is now regulated by the two Acts, viz., those of 1901 and 1905. This last applies only to immigrants under contract or agreement to perform manual labour in Australia. The admission of such persons is permitted if the contract is in writing, is made by or on behalf of some person named, who must be resident in Australia, and approved by the Minister. Such approval will not be given if the contract is made with the view of affecting an industrial dispute or if the remuneration and other terms are not as advantageous to the contract immigrant as those current for workers of the same class at the place where the contract is to be performed.

There is an additional provision where the proposed immigrant is not a British subject born in the United Kingdom or descendant of such a person. In such case it has to be proved that there is a difficulty in the employers obtaining in the Commonwealth a worker of at least equal skill and ability.

In case of infraction of the law it is provided that the contract is absolutely void and the immigrant and employer are both liable to penalties, and the employer is also liable to pay the immigrant until he obtains employment, or, at the option of the immigrant, to provide expenses for his return to the country whence he came.

3. **Prohibited Immigrants.**—(i.) *Provisions of the Acts.* Persons comprised in the following classes are prohibited from entering the Commonwealth, viz.:—(*a*) Any person who fails to pass the dictation test; that is to say, who fails to write out not less than fifty words of a language prescribed by regulation when dictated to him by an officer administering the Act. (*b*) Any person likely to become a charge upon the public. (*c*) Any idiot or insane person. (*d*) Any person suffering from an infectious or contagious disease. (*e*) Any person who has been convicted of an offence, other than a mere political offence, and has been sentenced to imprisonment for one year or longer and has not served his sentence or received a pardon. *f*) Any person undesirable for moral reasons.

Regarding (*a*) it may be stated that the Act of 1901 provided for the dictation of not less than fifty words of a European language. The Act of 1905 provided for the retention of this test until regulations be passed prescribing the languages to be employed. No such regulations have yet been made, and the provision of the Act of 1901 is therefore *de facto* still in force. It may be stated that the dictation test is not and never has been imposed upon persons of European race.

(ii.) *Exemptions.* To these restrictions there are the following exemptions, viz. :—(*a*) Any person holding an exemption certificate. (*b*) Members of the King's regular land and sea forces. (*c*) The master and crew of any public vessel of any Government. (*d*) The master and crew of any other vessel landing during the stay of the vessel in a Commonwealth port; but before the ship can obtain her outward clearance the crew must, at the demand of an officer administering the Act, be mustered, and if any member of the crew be missing, and would otherwise, in the opinion of the officer, have been a prohibited immigrant, then such person is deemed to be a prohibited immigrant, and until the contrary be proved, to have entered the Commonwealth contrary to the Act. (*e*) Any Commissioner of, or other person accredited from, the Imperial or any other Government.

(iii.) *General Provisions.* An immigrant may be required to pass the dictation test at any time within a year after he has entered the Commonwealth.

A prohibited immigrant within the meaning of (*a*) above may, at the discretion of an officer, be allowed to enter the Commonwealth, or to remain within it, upon depositing £100 and within thirty days either obtaining an exemption certificate or departing from the Commonwealth; in either case the deposit is returned.

The punishment for breach of the Act by a prohibited immigrant is imprisonment for six months and deportation in addition, if so ordered.

4. **Liability of Shipmasters and Others.**—The master, owners, agents, and charterers of a vessel from which a prohibited immigrant enters the Commonwealth are jointly and severally liable to a penalty not exceeding £100 for each entrant. The vessel may be detained as security, but may be released upon the giving of a bond with two sureties for the payment of any penalties; the vessel may be seized and sold in default of payment of penalties. The master, owners, agents, and charterers may be required to provide a return passage for the prohibited immigrant, and to pay for his maintenance during his detention prior to deportation. Masters of vessels are authorised to prevent such a person from landing and to obtain any necessary assistance.

Under the Immigration Restriction Act 1908, any person on board a vessel at the time of her arrival from any place outside Australia at any port in Australia who is not (*a*) a *bonâ fide* passenger of the vesssel, or (*b*) a member of the crew of the vessel whose name is on the articles, is deemed to be a stowaway, unless the master gives notice that the person is on board the vessel, and does not permit him to land until an officer has had an opportunity of satisfying himself that the person is not a prohibited immigrant. The master, owners, agents, and charterers of a vessel are jointly and severally liable to a penalty of £100 for each stowaway brought into any port in Australia. Power is given to search vessels for stowaways. The Immigration Restriction Act, 1910, provides penalties for being concerned in bringing immigrants secretly to the Commonwealth.

5. **Agreements with other Countries.**—Arrangements may be made with the Government of any country regulating the admission into Australia of the subjects or citizens of such country, such subjects being not, during the subsistence of the arrangement, required to pass the dictation test.

Persons who have resided either continuously or from time to time in the Commonwealth for a period of five years in the whole, and who are about to depart from it, being persons who, if they return, would be prohibited immigrants, may obtain a certificate of exemption entitling them to return.

Certificates of exemption are granted by the Minister of External Affairs, whose department administers the Act.

6. **Statistics.**—The following tables shew the number of persons who desired but were not permitted to land, those who were allowed to land, and the nationality of the persons admitted :—

PERSONS ADMITTED OR REFUSED ADMISSION TO COMMONWEALTH UNDER PROVISIONS OF IMMIGRATION RESTRICTION ACT, 1903 to 1910.

Year.	Persons Admitted who Passed Education Test.	Persons Admitted without Passing Education Test.	Persons Refused Admission.
1903 ...	13	44,117	152
1904 ...	1	48,317	117
1905 ...	3	47,940	106
1906 ...	Nil	57,646	53
1907 ...	Nil	71,988	62
1908 ...	1	75,670	108
1909 ...	1	83,324	108
1910 ...	...	94,495	41

NATIONALITY OF PERSONS ADMITTED, 1903 to 1910.

Nationality.	1903.		‡1904.	1905.		*1906	*1907.	‡1908.	‡1909.	1910.*
	Without Test.	With Test.	Without Test.	Without Test.	With Test.	Without Test.	Without Test.	Without Test.	Without Test.	Without Test.
EUROPEANS—										
Austrians	809	...	930	683	...	691	651	736	895	818
Belgians	20	...	20	25	...	33	64	45	35	50
British	35,061	...	39,026	39,975	...	47,396	60,172	64,374	71,201	81,456
Danes	94	...	103	125	...	259	280	227	272	289
Dutch	30	...	26	43	...	91	94	120	187	175
French	1,390	...	2,076	1,402	...	1,866	1,685	1,546	1,347	1,160
Germans	1,028	...	823	926	...	1,339	1,909	1,911	2,109	2,449
Greeks	210	...	194	121	...	240	202	296	327	380
Italians	793	...	814	734	...	839	992	902	1,078	883
Poles	8	...	8	13	...	5	6	22	24	11
Portuguese	5	...	...	2	...	3	6	5	10	3
Rumanians	...	...	...	...	...	...	...	12	11	3
Russians	148	...	122	157	...	293	388	349	466	735
Scandinavians	382	...	320	281	...	776	1,173	825	891	1,210
Spaniards	53	...	27	35	...	32	86	57	56	49
Swiss	20	...	79	63	...	68	78	78	131	104
Turks	13	...	...	3	...	8	6	4	14	10
Europeans†	...	...	7	17	...	18	29	112	16	22
AMERICANS—										
N. Americans	561	...	563	603	...	867	889	687	692	746
S. Americans	6	...	...	...	...	12	15	10	14	13
Negroes	10	...	13	15	1	4	9	4	6	14
French Creoles	...	...	...	...	...	...	...	...	...	...
West Indians	7	3	6	3	1	...	13	23	6	13
ASIATICS—										
Afghans	...	...	...	7	...	3	9	15	3	2
Arabs	...	...	...	3	...	...	8	3	1	1
Burmese	...	...	...	...	...	...	...	...	1	...
Chaldeans	...	...	...	...	...	...	...	...	...	...
Chinese	986	...	847	1,269	...	1,134	1,424	1,771	1,729	1,819
Cingalese	8	2	9	15	...	6	12	10	10	14
East Indians	...	1	...	...	...	...	...	...	...	...
Eurasians	...	2	...	...	...	...	...	...	6	14
Filipinos	37	...	54	74	1	120	57	27	37	66
Hindoos	48	2	461	146	...	75	129	74	130	156
Japanese	558	1	461	251	...	356	521	555	509	565
Javanese	...	...	75	62	...	52	1	...	52	4
Kurds	...	...	...	...	...	...	...	...	...	...
Malays	526	...	469	289	...	436	370	230	309	302
Syrians	43	1	39	51	...	66	58	45	73	96
OTHER RACES—										
Maoris	...	1	...	1	...	2	8	48	108	62
Mauritians	...	...	...	...	...	...	...	3	3	4
Pacific Islanders ...	1,098	...	193	98	...	156	121	89	94	54
Papuans	145	...	552	415	...	368	493	430	439	622
St. Helena Blacks ...	...	...	...	...	...	...	...	1	1	...
Unspecified	20	...	20	33	...	32	30	14	31	141
Total	44,117	13	48,337	47,940	3	57,646	71,988	75,660	83,324	94,495

* No persons were admitted after passing the test in either of the years 1906, 1907, or 1910.
† Not specified. ‡ One person was admitted, after passing the test, in each of the years 1904, 1908, and 1909.

§ 2. Patents, Copyrights, Trade Marks, and Designs.

1. **Devolution of Jurisdiction upon the Commonwealth.**—Prior to the establishment of Federation, and for a few years thereafter, each Australian State possessed independent jurisdiction in respect of patents, copyrights, trade marks, and designs, and had, with the exception of Tasmania in regard to copyrights, enacted its own laws. Any person, therefore, who desired to obtain the grant of a patent, or the registration of any copyright, trade mark, or design had necessarily, with the exception aforesaid, to incur the trouble and expense of making separate applications. The Commonwealth Constitution Act conferred upon the Federal Parliament power to legislate respecting these matters. (See page 39 hereinbefore.) The Act of 1909 extended the jurisdiction to Papua.

The State Acts, though in general based upon the Imperial Statutes dealing with these subjects, were not wholly governed by them. The Commonwealth Acts, both in regard to principle and practice, have the same general foundation, but in some respects have been modified and brought into line with the totality of Australian experience.

2. **Patents.**—The first Commonwealth Patents Act was passed in 1903, and was amended in 1906, 1909, and 1910. (See page 50 hereinbefore.) Under these Acts, which are administered by a "Commissioner of Patents," the power of the States to grant patents was abolished, and their functions in that respect were transferred to the Commonwealth. A single Commonwealth patent now gives throughout the Commonwealth that protection which formerly could only be obtained by procuring a patent in each State. The rights of State patentees are in all cases reserved to them. The holder of a State patent in force may obtain, for a period not exceeding the unexpired time thereof, a Commonwealth patent for the invention comprised in the State patent. Any State may, however, be excepted from the patent if the Commissioner of Patents is satisfied that the invention either (*a*) is not novel, (*b*) has been made the subject of a pending application, or (*c*) has been published in such State. Comparatively small fees, totalling £8, are now sufficient to obtain for an inventor protection throughout the Commonwealth, and the only renewal fee (£5) is payable before the expiration of the seventh year of the patent, or within such extended time, not exceeding one year, as may be allowed.

(i.) *Applications for Patents.* Any of the following persons may make application for a patent:—(*a*) The actual inventor. (*b*) His assignee, agent, attorney, or nominee. (*c*) The actual inventor or his nominee jointly with the assignee of a part interest in the invention. (*d*) The legal representative of a deceased actual inventor or of his assignee. (*e*) Any person to whom the invention has been communicated by the actual inventor, his legal representative, or assignee (if the actual inventor, his legal representative, or assignee is not resident in the Commonwealth). An application for a patent must be for one invention only, and must be made in the form prescribed, and lodged by being left at or sent by post to the Patent Office at Melbourne. It must be accompanied by either a provisional or a complete specification. The application must contain a declaration in the prescribed form setting out the facts relied on to support the application, and must be signed by the applicant before a witness.

(ii.) *Term for which Granted.* The term for the duration of every patent is limited to fourteen years from the date of application. A patent ceases if the patentee fails to pay the renewal fee within the prescribed time.

iii.) *Opposition to Grant of Patent.* Within three months of the advertisement of the acceptance of a complete specification, or within such further time, not exceeding one month, as may be allowed by the Commissioner, any person may give notice at the Patent Office of opposition to the grant on any of the following grounds:—(*a*) That the applicant has obtained the invention from the opponent. (*b*) That the invention has not been communicated to the applicant by the actual inventor (if the actual inventor is not resident within the Commonwealth). (*c*) That the invention has been patented in the

Commonwealth on an application of prior date or has been patented in a State. (*d*) That the complete specification describes an invention other than that described in the provisional specification, and that the opponent has applied for a patent for such other invention in the interval between the leaving of the provisional and complete specifications. (*e*) Want of novelty. (*f*) Prior publication.

The case is heard and decided by the Commissioner, from whose decision an appeal lies to the High Court or the Supreme Court of the State in which the Patent office is situated.

(iv.) *Single Patent for Cognate Inventions.* The Act of 1909 provides that two or more provisional specifications for inventions which are cognate or modifications one of the other may be combined in one complete specification, upon which a single patent may be granted in respect of the whole of such applications.

(v.) *Patents of Addition.* By the Patents Acts of 1903 and 1909 special provisions are made for granting patents to an applicant or patentee in respect of any improvement on his invention. Such patents are called "Patents of Addition." They are granted for the unexpired term of the original patent, and in respect of such patents no renewal fee is payable.

(vi.) *Amendments.* Amendments to specifications by way of disclaimer, correction, or explanation may be allowed on request to the Commissioner, provided that the specification, if amended as requested, does not claim an invention substantially larger than, or different from, the original invention. Any person may oppose an amendment on giving notice of opposition at the Patent Office.

(vii.) *Revocations of Patents.* Revocation of a patent may be obtained by petition to the High Court or the Supreme Court of a State. Every ground on which a patent might at common law be repealed by *scire facias* is available as a ground of revocation. A petition for revocation may be presented by either (*a*) the Attorney-General or person authorised by him, (*b*) any person alleging that he was the actual inventor or that the patent was obtained from him by fraud, or (*c*) by any person alleging that he had publicly used, made, or sold within the Commonwealth before the date of the patent anything claimed by the patentee as his invention.

(viii.) *Compulsory Working and Licenses.* At any time not less than four years after the date of a patent, and not less than two years after the 13th December, 1911, any person may apply to the High Court or the Supreme Court of the State in which the Patent Office is situated for an order declaring that the patented article or process is not manufactured or carried on to an adequate extent in the Commonwealth. From and after the time when any such order may take effect, the patent is not deemed to be infringed by the manufacture or carrying on in the Commonwealth of the patented article or process, or by the vending within the Commonwealth of the patented article made within the Commonwealth. Any person interested may, after the expiration of two years from the granting of the patent, present a petition to the Commissioner alleging that the reasonable requirements of the public with respect to a patented invention have not been satisfied and praying for the grant of a compulsory license or, in the alternative, for the revocation of a patent. If the parties do not come to an arrangement between themselves, the Commissioner, on being satisfied that a *prima facie* case has been made out, must refer the petition to the High Court or the Supreme Court of the State in which the Patent Office is situated. If the Commissioner is not satisfied that a *prima facie* case has been made out he may dismiss the petition.

(ix.) *Restoration and Surrender of Patents.* The Act of 1906 provides for the restoration (under certain conditions) of applications or patents which may have lapsed through default of the applicant or of an officer of the Patent Office.

A patentee may surrender a State patent for an invention which has been further registered under Section 7 of the Act of 1903; or, by permission of the Court, may surrender a Commonwealth patent which is the subject of proceedings therein.

(x.) *Contracts and Proceedings.* No patentee may enforce conditions of contract which will restrict the rights of the user to simultaneously use, send, or carry out the inventions of any other persons; such contracts made prior to the Act of 1909 may be determined by three months' notice from either party.

Any person threatened by circular or advertisement with proceedings for infringement may apply for an injunction and damages, unless the threatening party shows due diligence in prosecuting an action.

(xi.) *International Protection of Patents.* The Patents Act of 1903 contained provisions under which the international arrangements for the protection of patents contained in the Imperial Acts could be made applicable to the Commonwealth by order of the King-in-Council. The necessary proclamation was issued by the Imperial Government as regards England and Australia on the 1st February, 1907, and as regards all other countries in the International Convention on the 5th August, 1907. British and foreign inventors are now, therefore, if they apply in Australia within twelve months of their first foreign application, entitled to receive patents for their inventions in priority to other applicants, and such patents have the same date as the date of the applications abroad. Corresponding arrangements have also been made by the Commonwealth with New Zealand.

(xii.) *Patent Attorneys.* Any person on passing the prescribed examination, and on paying a fee of £5, may be registered by the Commissioner as a patent attorney. A solicitor may practise as a patent attorney without passing the prescribed examination and without being registered as a patent attorney. No person may advertise his business in a manner to imply that he has official connection with the Patent Office.

(xiii.) *Patent Office Publications.* Every complete specification which has become open to public inspection by acceptance, or under the International Convention, is now printed shortly after being advertised, and the whole of the accepted specifications subsequent to No. 4000 of 1905, may now be purchased from the Government Printer, Melbourne, at the price of 1s. for each copy; reductions in price are made to purchasers of thirty or more selected specifications.

The *Australian Official Journal of Patents* is issued weekly, and contains lists of applications and proceedings, with illustrated notes of accepted complete specifications. A supplementary annual volume contains statistics, indexes to names of persons concerned, classified indexes to subject matter of applications lodged, and a numerical index to proceedings on Commonwealth applications which have been advertised during the year; there are also name and numerical indexes to proceedings on State applications.

(xiv.) *Applications Filed, Provisional Specifications Accepted, and Letters Patent Sealed, 1904 to 1910.* The numbers of individual inventions in respect of which applications were filed in the States or Commonwealth during each year from 1904 to 1910 inclusive are shewn in the following table. The number of applications accompanied by provisional specifications and the number of patents sealed in respect of applications made in each year are also shewn.

PATENTS.—APPLICATIONS FILED AND LETTERS PATENT SEALED IN THE COMMONWEALTH, 1904 to 1910.

Year	1904.*	1905.	1906.	1907.	1908.	1909.	1910.
No. of Applications	2,243	2,685	2,743	2,903	2,840	3,309	3,605
" " accompanied by provisional specifications	1,241	1,528	1,547	1,678	1,811	2,165	2,294
Letters patent sealed on applications of each year	1,198	1,468	1,536	1,563	1,227	1,359†	168‡

* From 13th February. † Up to the 31st December, 1910. ‡ Up to the 19th April, 1911.

(xv.) *Revenue of Patent Office.* The revenue of the Commonwealth Patent Office for each year since its creation to the end of the year 1910 is shewn in the subjoined table.

REVENUE OF COMMONWEALTH PATENT OFFICE, 1904 to 1910.

Particulars.	1904.	1905.	1906.	1907.	1908.	1909.	1910.
	£	£	£	£	£	£	£
Fees collected under States Patents Acts	3,181	5,567	6,233	3,746	2,006	1,703	1,940
Fees collected under Patents Acts 1903-10	2,459	13,379	14,667	13,612	14,146	14,087	17,042
Receipts from publications ...	...	102	134	155	146	216	208
Petty receipts	19	37	43	34	32	33	33
Total	5,659	19,085	21,077	17,547	16,330	16,039	19,223

3. **Copyright.**—Prior to the establishment of Federation the copyright legislation enacted by all the States except Tasmania, throughout which State Imperial legislation governed local productions, was based upon and closely followed the English law of copyright, differing, however, in some cases therefrom as to the periods for which a copyright was granted. Only local publications were affected by it. A colonial law did not affect the rights of authors and artists where copyright was acquired outside the colony.

(i.) *Copyright Acts.* The first Commonwealth Act was passed in 1905 (see page 50 hereinbefore). It deals with literary, musical, dramatic, and artistic copyrights, and applies only to Australian publications. It may be applied to any copyright or performing right in any literary, musical, dramatic, or artistic work, entitled to protection in Australia by virtue of any Act of the Parliament of the United Kingdom, or entitled to protection in any State by virtue of any State Copyright Act, by registration of such right.

(ii.) *Principal Features.* The principal feature of the Australian Act is that it provides the same duration of right under the above heads, namely, the life of the author and seven years thereafter, or forty-two years from publication, whichever be the longer. Copyright subsists in every book, whether the author be a British subject or not, which has been printed in type, set up in Australia, or plates made therefrom, or from plates or negatives made in Australia in cases where type is not necessarily used, and has, after the commencement of the Act, been published in Australia, before or simultaneously with its first publication elsewhere. With respect to lectures, it is provided that the author shall be the first owner of the lecturing right, and that he may prevent publication of a report of the lecture by giving notice at the beginning of the lecture, or by a conspicuous written notice on the entrance door or in the lecture-room stating that reporting is prohibited. The owner of the copyright in a book may be requested by the Minister, on application being made by any person desirous of translating such book, to make a translation thereof, if it be not translated within ten years of publication. If the owner of the copyright fail to comply with such request the Minister may confer the right of translation into a particular language upon the person making the application. The person ordering a photograph for which consideration is paid is the owner of the copyright in it.

An important feature of the Copyright Act is that provision is made whereby the owner of the copyright in any book or artistic work, or his agent, may, by notice in the prescribed form, require any person to deliver up to him any pirated reproduction of the book or work, and similarly the owner of the performing right in a musical or dramatic work, or his agent, may forbid the performance of the work in infringement of his right,

and may require any person to refrain from performing or taking part in the performance of the musical or dramatic work specified. Any person failing to observe the requirements of any notice served under these provisions is liable to a penalty not exceeding £10.

(iii.) *Registration.* Registration is a necessary preliminary to an action for infringement, but copyright exists independently of registration. The Commissioner of Patents has been appointed "Registrar of Copyrights." Proceedings for the rectification of the register may be taken before the Supreme Court of any State. In the matters of copyright the Commonwealth is a party to the Berne Convention.

Particulars of applications for registration of copyrights and of the revenue derived therefrom are given in paragraph 6 hereof.

4. **Trade Marks.**—The remarks made concerning the unification of the patent system of the Commonwealth apply equally to trade marks. Under the Trade Marks Act 1905, which came into force on the 2nd July, 1906, the Commissioner of Patents is appointed to act also as "Registrar of Trade Marks." There are two trade marks, viz., the "Workers' Trade Mark" and the "Commonwealth Trade Mark," for which special provisions are contained in the Act; the provisions regarding the former of these two Trade Marks have, however, been held to be unconstitutional (see p. 1073 *ante*). The part of the Act, governing the registration and application of the Commonwealth Trade Mark, applies to all goods included in or specified by a resolution passed by both Houses of Parliament that the conditions as to remuneration of labour in connection with their manufacture are fair and reasonable.

(i.) *Essential Particulars of Trade Marks.* A registrable trade mark must consist of essential particulars with or without additional matter. The essential particulars must be one or more of the following:—(*a*) A name or trading style of a person printed, impressed, or woven, in some particular and distinctive manner; (*b*) a written signature of the person applying for registration thereof or of some predecessor in his business; (*c*) a distinctive device, mark, brand, heading, label, or ticket; (*d*) or invented word or invented words; (*e*) a word or words having no reference to the character or quality of the goods, and not being a geographical name used or likely to be understood in a geographical sense. The additional matter which may be added must be either (*a*) any letters, words, or figures or (*b*) any combination of letters, words, or figures or any of them.

(ii.) *State Registrations.* State registrations cease to be in force at the expiration of fourteen years from the date of the Commonwealth Act, or at the time when, under the State Trade Marks Act, the trade mark would, if after the commencement of the Commonwealth Act no fee for the continuance of its registration were paid, first become liable to removal from the register, whichever first happens. It is also provided that no fee shall be receivable nor shall any act be done after the commencement of the Commonwealth Act for the continuance of the registration of a trade mark under a State Act. Commonwealth registration of a State registered mark may be effected, and the fact of its registration in a State prior to the coming into force of the Commonwealth Act, may entitle the registered proprietor in the State to Commonwealth registration, notwithstanding the existence of defects which might be ground for refusal of an application for the registration of a new trade mark.

(iii.) *Duration of Registration and General Provisions.* The registration of a trade mark is for a period of fourteen years, but may be renewed from time to time. International and intercolonial arrangements for the mutual protection of trade marks may be made in a manner similar to that provided for the protection of patents. In this regard Australia has become a party to the International Convention for the protection of industrial property. Registration may be opposed by any person lodging a notice of opposition at the Trade Marks Office within three months after the advertisement of the application, or such further time, not exceeding three months, as may be allowed.

(iv.) *Publications.* The *Australian Official Journal of Trade Marks* is issued weekly and contains lists of applications and proceedings, with representations of marks (when

accepted) sought to be registered. *Copyrights.* An index of owners of literary, artistic, and international or State copyright, together with an alphabetically-arranged list of the subjects of works, is published in the official journal of trade marks, and, at the end of each year, published in consolidated form. *Designs.* Information corresponding with that given for copyrights is published. Indexes to names of applicants and subject matter of applications are compiled and are on sale.

5. **Designs.**—The Designs Act of 1906 came into operation on the 1st January, 1907. Under this Act a Commonwealth Designs Office has been established and the Commissioner of Patents appointed "Registrar of Designs."

(i.) *Registration.* Any new and original design which has not been published in Australia before the lodging of an application for its registration may be registered in respect of all or any of the articles enumerated in the classification contained in the regulations, which comprise jewellery, paperhangings, carpets, floor-cloths, lace, hosiery, millinery, wearing apparel, textile fabrics, bookbinding, and articles composed wholly or chiefly of a variety of solid substances. A separate application must be made in respect of each class in which the owner of the design desires it to be registered. After an application for the registration of a design has been lodged the design may be published and used without prejudice to the validity of the registration.

(ii.) *Duration of Copyright in Designs.* The registration takes effect as from the date of the lodging of the application, and, subject to the provisions of the Act, remains in force for a period of five years from that date. The owner of a registered design must, within two years after registration, substantially use the design in Australia, and if he fails to do so the copyright ceases. If, however, such design is used in any manufacture abroad the above period is limited to six months.

(iii.) *General.* The Act also contains provisions regarding the remedies for infringement of designs and the rectification of the register. Arrangements for the international and intercolonial protection of copyright in designs were made by the same proclamation referred to above with regard to patents and trade marks. The owner of a registered design must cause each article to which the design is applied to be marked before delivery for sale with the prescribed mark to denote that the design is registered.

6. **Applications for Copyrights, Trade Marks, and Designs.**—The following table gives particulars of copyright, trade mark, and design applications received and registered under the Commonwealth Acts from 1907 to 1910 inclusive:—

COPYRIGHT, TRADE MARK, AND DESIGN APPLICATIONS RECEIVED AND REGISTERED UNDER COMMONWEALTH ACTS, 1907 to 1910.

Year.	Copyrights.				Trade Marks.	Designs.
	Literary.	Artistic.	International	Total.		
APPLICATIONS RECEIVED.						
1907 ...	372	346	7	725	2,065	176
1908 ...	479	581	46	1,106	1,580	155
1909 ...	474	518	14	1,006	1,688	187
1910 ...	464	569	6	1,039	1,729	186
APPLICATIONS REGISTERED.						
1907 ...	227	208	...	435	1,395	77
1908 ...	382	359	21	762	3,150	180
1909 ...	412	527	4	943	1,455	166
1910 ...	361	495	12	868	1,190	160

The following table shews the revenue of the Copyright, Trade Mark, and Design Office during the years 1909 and 1910:—

REVENUE OF COPYRIGHT, TRADE MARK, AND DESIGN OFFICE, 1909 and 1910.

Particulars.	1909.					1910.				
	Copyrights.	Trade Marks.	Designs	Publications	Total.	Copyrights.	Trade Marks.	Designs	Publications	Total.
	£	£	£	£	£	£	£	£	£	£
Fees collected under State Acts	4	61	...	...	65	1	164	...	...	165
Fees collected under Cwlth. Acts	145	4,893	170	117	5,325	163	4,655	171	90	5,079
Total ...	149	4,954	170	117	5,390	164	4,819	171	90	5,244

In addition to the applications for copyright received and registered under the Commonwealth Act, as specified in the first table of this paragraph, certain applications for registration of copyrights under State Acts were received and registered. The following table gives particulars of such applications for the years 1907 to 1910:—

APPLICATIONS FOR REGISTRATION OF COPYRIGHT UNDER STATE ACTS, 1907 to 1910.

Year.	N.S.W.		Victoria.		Queensland.		S. Australia.		W. Australia.		Tasmania.	
	Literary.	Artistic.	Literary.	Artistic.	Literary.	Artistic.	Literary.	Artistic.	Literary.	Artistic.	Literary.	Artistic.
APPLICATIONS RECEIVED.												
1907 ...	...	4	2	19	...	...	...	1	1	...	...	...
1908 ...	4	2	4	8	...	...	...	1	...	...	...	...
1909 ...	...	...	8	4	...	...	...	...	...	...	...	...
1910 ...	...	...	2	5	...	...	...	...	...	...	...	...
APPLICATIONS REGISTERED.												
1907 ...	...	4	2	19	...	...	...	1		...	...	...
1908 ...	4	2	3	1	...	...	...	1	...	...	...	...
1909 ...	...	...	9	11	...	...	...	...	...	...	...	...
1910 ...	...	...	2	1	...	...	...	...		...	...	...

§ 3. Old-age Pensions.

1. **General.**—A system for providing for the relief of the aged poor by some means which did not involve the stigma associated in so many minds with the idea of charitable aid, and which, while protecting the recipients from actual want, still left to them as large a degree of freedom as possible, has long been sought for by economists, statesmen, and social reformers. The difficulties surrounding a satisfactory solution of the question are numerous and great, and various schemes have been propounded with the object of overcoming them. Two of the principal objections which have been urged against the introduction of a general system of old-age pensions are—

(i.) its costliness;
(ii.) its tendency to induce thriftlessness.

The former is undoubtedly a serious difficulty, since in any normally constituted population the number of persons aged say sixty-five years and upwards will represent about 5 per cent. of the total population, and the provision of the funds required to pay to these a sum which would provide them with even the barest necessaries of life would be a very considerable burden upon the State Treasury. To limit this amount various suggestions have been made, of which probably the most effective have been those which provide, the one for a contribution to the pension fund by the pensioner during his earlier years, and the other for a reduction of the amount of pension payable to those in receipt of income from other sources. The former of these is the principle which has been acted upon in the scheme in operation in Germany, while the latter is that which underlies the schemes in vogue in the Commonwealth, New Zealand, and the United Kingdom.

The objection which has sometimes been raised to the payment of old-age pensions on the score of the tendency to thriftlessness thereby induced is one which, in Australia, at all events, is not accorded much weight, the general feeling being that the number of cases in which the prospect of a pension of, say, 10s. per week from sixty-five onwards would lead to thriftlessness in earlier years, is so small as to be practically negligible.

2. **Introduction of Old-age Pensions into Australia.**—The credit of introducing old-age pensions into the Southern Hemisphere belongs, not to the Commonwealth, but to her sister dependency, the Dominion of New Zealand, where pensions have been payable since 1st April, 1898. The first State of the Commonwealth to make provision for the payment of old-age pensions was Victoria, whose legislation on the subject came into operation on 18th January, 1901. Later in the same year, viz., on 1st August, 1901, the pension system of New South Wales came into force, while in the case of Queensland old-age pensions became payable from 1st July, 1908. Finally, an Act providing for the payment of old-age pensions throughout Australia was passed by the Commonwealth Parliament in 1908, pension payments thereunder commencing on 1st July, 1909. This Act superseded the State Acts in so far as provision for old-age is concerned.

3. **Commencement of Commonwealth Act.**—The Commonwealth Invalid and Old-age Pensions Act was assented to on the 10th June, 1908, and payment of old-age pensions commenced as from 1st July, 1909. Provision is also made in the Act for the payment of invalid pensions. The part of the Act relating thereto, however, did not come into operation on the commencement of the Act, but it was provided that it should commence on some subsequent date to be fixed by proclamation. This proclamation was made on the 19th November, 1910, the first payments thereunder being made on the 15th December, 1910.

4. **Administration of Commonwealth Act.**—The general administration of the Act is, subject to the control of the Minister, placed in the hands of the Commissioner of

Pensions, who is assisted by a Deputy Commissioner appointed in each State. Power is given to the Commissioner and the Deputy Commissioners to summon witnesses, receive evidence on oath, and require the production of documents for the purposes of the Act.

Each State is divided into districts, each of which is placed in charge of a Registrar, whose duties consist in receiving and investigating pension claims and in keeping such books and registers as are required for carrying out the provisions of the Act.

5. **Pension Age.**—For an old-age pension the age qualification is similar to that previously in force in New South Wales under the State Act, viz., attainment of the age of sixty-five years, or, in the event of permanent incapacitation for work, attainment of the age of sixty years. The Act also provides that the age qualification for women may be fixed by proclamation at sixty years instead of sixty-five. This proclamation was made on the 19th November, 1910, the first payments thereunder being made on the 15th December, 1910. For an invalid pension the age qualification is attainment of the age of sixteen years if accompanied by permanent incapacitation for work.

6. **Length of Residence.**—In the original Act of 1908 the residential qualification for an old-age pension was the same as that of the New South Wales Act, viz., continuous residence for twenty-five years. Owing, however, to the fact that in the other two States in which pensions were payable under the State regime the residential qualification was only twenty years, an amendment of the Act was passed by the Federal Parliament in August, 1909, reducing the Commonwealth term to twenty years also, thus diminishing the chance of lapse of pension through transfer from State to Commonwealth. For an invalid pension continuous residence for at least five years is required. In neither case, however, is continuous residence in Australia deemed to have been interrupted by occasional absences not exceeding in the aggregate one tenth of the total period of residence. The applicant for any pension must be residing in Australia on the date when he makes his claim, and in the case of an invalid pension must have been incapacitated while in Australia.

7. **Rates of Pension.**—The rate of pension payable, whether for old age or invalidity, is required by the Act to be determined by the Commissioner or one of the Deputy Commissioners, and is to be fixed at such amount as he deems reasonable and sufficient, having regard to all the circumstances of the case, but must not exceed £26 per annum in any event, nor be at such a rate as will make the pensioner's income, together with pension, exceed £52 per annum.

8. **Limitations in respect of Income and Property.**—With a view to restricting the pensions to persons actually needing assistance, provision was made in all the State Acts reducing the payment when the applicant already possessed income or property above a given amount. This principle is also embodied in the Commonwealth Act. In the case of independent income it has already been mentioned that the pension payment must be so modified that the aggregate income, inclusive of pension, does not exceed £52 per annum. Payments received by way of benefit from any registered friendly society, or during illness, infirmity, or old age from any trade union, provident society, or other society or association, are not, for the purposes of the Commonwealth Act, treated as income. As regards accumulated property, the pension is subject to a deduction of £1 per annum for every complete £10 by which the net capital value of the property exceeds £50, except where the property includes a home in which the pensioner permanently resides, and which produces no income, in which case a net capital value of £100 is allowed prior to the pension deduction coming into operation. Accumulated property, whether in or out of Australia, to the value of £310 or upwards will disqualify for a pension, as will also an applicant's direct or indirect deprivation of himself of such property with the object of obtaining a pension. In the case of husband and wife, except where they are living apart pursuant to any decree, judgment, order or deed of

separation, the net capital value of the accumulated property of each is deemed to be half the total net capital value of the accumulated property of both, and the amount of property in such case allowed prior to deduction is £50 if including, and £25 if not including a home.

9. **Character of Applicant for Pension.**—In all the State Acts provision was made that the recipients of old-age pensions should be persons of good moral character, and, in New South Wales and Victoria, imprisonment for extended periods would act as a disqualification. In the Commonwealth Act it is also provided that "no person shall receive an old-age pension unless he is of good character," but a similar provision is not made in the case of invalidity.

10. **Number of Commonwealth Claims and Pensioners.**—During the first year of practical working of the Commonwealth Act, viz., that ended 30th June, 1910, the number of cases considered has been 76,168. Of these 39,875 were cases in which a State old-age pension was exchanged for one payable by the Commonwealth. The remaining 36,293 were new applications received during the year, of which 30,526 were granted, 3921 were rejected, and 1846 were still in course consideration on 30th June, 1910. Details of the several States are as follows :—

COMMONWEALTH OLD-AGE PENSION BUSINESS.—YEAR ENDED 30th JUNE, 1910.

State.	State Pensions exchanged for C'wealth.	New Applications.				Total Cases Considered.	Total Claims Admitted during Year.
		Granted.	Rejected.	In Course of Consideration.	Total Received.		
N.S.W. ...	21,292	5,729	1,047	812	7,588	28,880	27,021
Victoria ...	11,945	9,952	1,229	441	11,622	23,567	21,897
Queensland ...	6,638	2,561	500	174	3,235	9,873	9,199
South Australia ...		6,331	626	133	7,090	7,090	6,331
West. Australia ...		2,515	315	162	2,992	2,992	2,515
Tasmania ...		3,438	204	124	3,766	3,766	3,438
Commonwealth	39,875	30,526	3,921	1,846	36,293	76,168	70,401

11. **Pensions Current on 30th June, 1910.**—The total number of pensions current on 30th June, 1910, was 65,492, or 4909 less than the number of claims admitted, due to the fact that 4498 pensions lapsed by death, and 411 by cancellation during the year. Details for the several States are as follows :—

COMMONWEALTH OLD-AGE PENSIONS CURRENT 30th JUNE, 1910.

State.	Claims Admitted.	Discontinuance by		Pensions current on 30th June, 1910.	
		Death.	Cancellation.	Number.	Per 1000 of Population.
New South Wales	27,021	1,680	126	25,215	15.28
Victoria	21,897	1,576	103	20,218	15.56
Queensland	9,199	548	90	8,561	14.52
South Australia	6,331	365	74	5,892	14.04
Western Australia	2,515	147	7	2,361	8.45
Tasmania	3,438	182	11	3,245	17.69
Total	70,401	4,498	411	65,492	14.81

12. **Sexes of Pensioners.**—Of the 65,492 persons in receipt of pension at 30th June, 1910, 31,781, or 48½ per cent., were male and 33,711, or 51½ per cent., were female. Details for the several States are as follows :—

SEXES OF PENSIONERS, 30th JUNE, 1910.

State.	Males.	Females.	Total.	*Masculinity.
New South Wales	12,046	13,169	25,215	91.47
Victoria	9,734	10,484	20,218	92.85
Queensland	4,774	3,787	8,561	126.06
South Australia	2,480	3,412	5,892	72.68
Western Australia	1,329	1,032	2,361	128.78
Tasmania	1,418	1,827	3,245	77.61
Total	31,781	33,711	65,492	94.27

* Number of males to each 100 females.

13. **Ages and Conjugal Condition of Pensioners Admitted during 1909-10.**—The recorded ages of the 30,526 persons to whom pensions were granted during the year 1909-10 varied considerably, ranging from 436 at age 60 to 1 at age 104. Particulars for quinquennial age groups are as follows :—

Age at Admission	Males				Females.				Grand Total.
	Single.	Married.	Widowed	Total.	Single.	Married.	Widowed	Total.	
60-64	182	531	180	893	162	615	1,060	1,837	2,730
65-69 ...	1,237	3,185	1,497	5,919	379	2,359	3,534	6,272	12,191
70-74	775	2,042	1,141	3,958	200	1,133	2,537	3,870	7,828
75-79	362	1,171	927	2,460	69	548	1,804	2,421	4,881
80-84	123	426	462	1,011	31	160	854	1,045	2,056
85-89	37	120	173	330	6	28	277	311	641
90-94	7	26	48	81	1	4	82	87	168
95-99	4	3	11	18	2	...	7	9	27
100-104	...	1	1	2	...	...	2	2	4
Total ...	2,727	7,505	4,440	14,672	850	4,847	10,157	15,854	30,526

14. **Amount Paid in Pensions.**—During the year 1909-10 the total amount paid in pensions was £1,497,330 distributed as follows over the several States :—

AMOUNT PAID IN COMMONWEALTH OLD AGE PENSIONS, 1909-10.

State.	Pension Payments.		State.	Pension Payments.	
	Amount Paid.	Per Head of Population.		Amount Paid.	Per Head of Population.
	£	s. d.		£	s. d.
New South Wales ...	594,440	7 4	Western Australia ...	46,302	3 5
Victoria	470,656	7 3	Tasmania ...	71,088	7 7
Queensland ...	196,476	6 10			
South Australia ...	118,368	5 8	Total ...	1,497,330	6 10

15. **Cost of Administration.**—Under the State regime the cost of administration differed considerably in the several States and for 1908-9 represented in New South Wales 4.17 per cent. of the amount actually paid in pensions. In Victoria for the same year the corresponding percentage was 0.70. During the year 1909-10 the total cost to the

Commonwealth of administering the Old-Age Pensions Department was £37,146, or 2.48 per cent. of the amount actually paid in pensions. As this total includes the cost of initiating the system in the three States of South Australia, Western Australia, and Tasmania, as well as extending it in the other three States, it is probable that the cost of administration in future years will represent a smaller percentage on the amount paid in pensions. Details concerning the cost of administration for 1909-10 are as follows:—

COST OF ADMINISTERING COMMONWEALTH OLD-AGE PENSIONS, 1909-10.

	£
Salaries	6,557
Temporary assistance	5,058
Services of magistrates, registrars, clerks of courts, and police ...	8,475
Commission to Postmaster-General's Dept., at 12s. 6d. per £100 paid	8,959
Postage and telegrams	3,376
Other expenses	4,721
	37,146

16. **Estimated Cost of Commonwealth Old-age Pension Scheme.**—In the first two issues of the Year Book estimates of the probable cost of the Commonwealth scheme were given. The former of these, based largely on the old-age pension experience of New South Wales, taken in conjunction with the census results of 31st March, 1901, and the subsequent estimates of increase of population, brought out a sum of £1,580,000 as representing the probable cost, including administration, if the New South Wales scheme had operated throughout the Commonwealth during 1906-7. In the second issue of the Year Book the results of a more extensive investigation were published. These were obtained from an analysis of the New Zealand old-age pension experience, combined with the Australian Census results of 1881, 1891 and 1901, and gave an estimate for each year from 1909-10 to 1926-7 of the probable cost, including administration, of the Commonwealth scheme as provided in the original Act. The figures so obtained for the year 1909-10, were £1,440,000; for 1914-15, £1,616,000, and for 1919-20, £1,854,000. The reduction of the residential qualification from 25 to 20 years under the Amending Act of 1909, had the effect of somewhat increasing the number eligible for pensions, and consequently of increasing the probable cost. The extent of this increase was estimated at 4 per cent., and in the third issue of the Year Book the estimated cost under the present system, on the assumption that the Commonwealth conditions would not differ materially from those of New Zealand, was given as follows:—1909-10, £1,498,000; 1914-15, £1,681,000; and 1919-20, £1,928,000. It will be seen that the actual cost for 1909-10, inclusive of administration, viz., £1,534,476, exceeded this last estimate by £36,476, or practically by the cost of administration.

With reference to the probable cost of invalidity pensions for the Commonwealth, the only experience available is that of New South Wales, where the number in force on 30th June, 1909, was 3714, and the cost, inclusive of administration, was approximately £79,200. On this basis, the cost of such a scheme for the Commonwealth, as a whole, may be roughly estimated at about £210,000 per annum for the present, increasing in subsequent years probably in proportion to the population.

17. **Liability Undertaken in Granting Old-age Pensions.**—As an indication of the extent of the responsibility which an old-age pension scheme involves, it may be mentioned that in connection with the evidence tendered to the Commonwealth Commission on Old-age Pensions a computation was made of the total liability in respect of accrued pensions which the Commonwealth would have incurred if, at 31st March, 1901, the date of the Census, 39 per cent. of the persons aged sixty-five and upwards were entitled to pensions of ten shillings per week. The present value at that date of the liability so computed was £10,415,820. (See Minutes of Evidence of Royal Commission on Old-age Pensions, p. 80.)

§ 4. Local Option.

1. **General.**—The principles of local option as to the sale of fermented and spirituous liquors have been applied in all the States of the Commonwealth. The last State to adopt these principles was Western Australia, where provision was made for a system of local option by the Licensing Act, 1911.

2. **New South Wales.**—The Acts in force relating to local option in this State are the Liquor Amendment Acts 1905 and 1907. There were formerly two Acts which dealt with the subject, viv., the Licensing Acts 1882 and 1883, consolidated by the Liquor Act 1898. Under the Act of 1905, which came into force on the 1st January, 1906, the local option vote is to be taken in every electorate on the day fixed for the poll therein at each general election. The option with regard to licenses extends to publichouses, wineshops, and clubs, and the persons entitled to vote are those entered on the Parliamentary electoral rolls.

(i.) *Resolutions to be Submitted.* Except where resolution (*c*)—see below—has previously been carried, and is in force in an electorate, the following resolutions are to be submitted:—(*a*) That the number of existing licenses continue. (*b*) That the number of existing licenses be reduced. (*c*) That no licenses be granted in the electorate. Where resolution (*c*) has previously been carried the resolution to be submitted is:—(*d*) That licenses be restored in the electorate. Resolutions (*a*) and (*b*) are carried by a simple majority of the votes given, but neither resolutions (*c*) nor (*d*) will be carried unless at least three-fifths of the votes given are in favour thereof, whilst at least 30 per cent. of the number of electors on the rolls must vote for such resolution. If resolution (*c*) is not carried, the votes given in favour of that resolution are to be added to the votes given for resolution (*b*).

(ii.) *Effects of Resolutions.* The effects of carrying the resolutions are as follow:—If resolution (*a*) is carried, the number of licenses may not exceed the number at the time of taking the vote. If resolution (*b*) is carried, the number of licenses must be reduced, and may be reduced to three-fourths the number at the time of voting. If resolution (*c*) is carried, no licenses may be granted, renewed, or transferred. If resolution (*d*) is carried, licenses may be granted, renewed, and transferred, but so that the number of licenses is not greater than the number held when resolution (*c*) was carried, nor less than half such number.

For the purpose of effecting a reduction under resolution (*b*), a special court determines the reduction to be made in the number of existing licenses, and decides which premises are to be closed. The best conducted premises are given a preference over others. If resolution (*c*) is carried, it is to take effect at the expiration of three years from the date of the vote.

(iii.) *Local Option Votes, 1907 and 1910.* The first local option vote under the Act of 1905 was taken at the general election in 1907, and the second at the election in 1910. The following statement shews the number of electorates in which each of the resolutions was carried:—

NEW SOUTH WALES.—EFFECTS OF LOCAL OPTION VOTES, 1907 and 1910.

Particulars.	General Election, 1907.		General Election, 1910.	
	Number of Electorates.	Number of Votes.	Number of Electorates.	Number of Votes.
Results in favour of—				
(*a*) Continuance	25	209,384	76	324,973
(*b*) Reduction	65	75,706	14	38,856
(*c*) No license	Nil	178,580	Nil	212,889

3. Victoria.—The Acts dealing with the subject of local option as to the sale of fermented and spirituous liquors in this State are the Licensing Acts 1890, 1906, and 1907. Other Acts, now repealed, which dealt with the subject are the Licensing Acts 1876, 1885, and 1888.

The last division of the Act of 1906 relates to the subject of local option; this division, however, does not come into force until the 1st January, 1917. In the meantime, in order to reduce the number of victuallers' licenses in Victoria, a Licenses Reduction Board is constituted.

(i.) *The Licenses Reduction Board.* Although the operations of this Board are not conducted in accordance with the principles of local option, the duties of the Board are, until the 31st December, 1916, after which date a system of local option comes into force under the Act of 1906, to reduce the number of licenses in excess of the statutory number, and to award compensation according to the scheme provided for by that Act. The Board consists of three members at a salary of £800 per annum each, who may not engage in any business or employment other than the duties of their office as members of the Board. The Board was first appointed on the 21st May, 1907. A Compensation Fund has also been established under the Act, and is raised by means of a compensation fee at the rate of 3 per cent. on the value of liquor purchased by every licensed victualler. The owner of the premises is chargeable with two-thirds, and the tenant with one-third of the compensation fee. The total amount paid into the Compensation Fund was £48,233 for the year 1907, £48,543 for 1908, £49,300 for 1909, and £48,875 for 1910. When any reduction of licensed premises has been made, the remaining hotels, which will be benefited, are to bear a *pro rata* assessment to make up the amount of license fees lost. The amount so lost up to the end of the year 1910 was £5790, which sum has been apportioned among 1408 hotels in proportion to the benefit which, in the opinion of the Board, they will derive from the closing. The maximum compensation, which is payable out of the Compensation Fund referred to above, is to be based on the results of the three years preceding the 31st December, 1906, in the case of owners, and of the three years preceding the 31st December, 1905, in the case of licensees. Up to the 31st December, 1910, 410 hotels had been closed by the Board, 129 of this number having surrendered their licenses. In all cases compensation was awarded, the total paid amounting to £194,989, or an average of £475 each. 127 of these hotels were situated in the metropolitan district, while the remaining 283 were in country districts. In 61 cases no claims for compensation were made by the licensees. The following table shews particulars of the operations of the Board up to the 31st December, 1910.

No reduction of any licensed premises is allowed in any licensing district in which the number of licensed premises is below the statutory number, but new licenses may, until 1917, be granted in such districts provided that a majority of the electors vote in favour of the increase, and that at least one-third of the number of electors on the roll record their votes.

VICTORIA.—OPERATIONS OF LICENSES REDUCTION BOARD, 31st DECEMBER, 1910.

Particulars.	Licenses in December, 1906.			Hotels Deprived of Licenses	Compensation Awarded.		Hotels Surrendered.	Compensation Awarded.	
	Number in Existence.	Statutory Number.	Number in Excess.		Owner.	Licensee.		Owner.	Licensee.
					£	£		£	£
Metropolitan & Suburban	1,020	877	401	125	89,800	15,202	2	2,371	519
Country	2,440	1,622	976	156	51,170	8,708	127	24,397	2,822
*Total ...	3,460	2,499	1,377	281	140,970	23,910	129	26,768	3,341

* In some districts the number of hotels was below the statutory number; in these districts the total number of hotels less than the statutory number was 418.

(ii.) *Local Option Resolutions.* A local option vote of the electors is to be taken in every electoral district for the Legislative Assembly on the day fixed for the poll at each general election after the 1st January, 1917. The resolutions to be submitted, the majorities necessary, and the effects of carrying the resolutions are the same as specified in the case of New South Wales. Where any license existing before the 1st February, 1886, is cancelled as the result of a local option vote, the owner and licensee have each a claim to be paid out of the Compensation Fund, but only to the extent that such fund is from time to time available. If it appear to the Treasurer that there is not sufficient money in the fund to meet the claims, he may require every licensed victualler in Victoria to pay an additional compensation fee in order to satisfy the claims.

4. **Queensland.**—In Queensland the subject of local option is dealt with in Part VI. (sections 114 to 126) of the Licensing Act 1885. The provisions of that part of the Act may be applied in any municipality or division, or any subdivision of either, or in any other area which forms part of a municipality or division, and also forms part of one licensing district.

(i.) *Resolutions to be Submitted.* Any number, not less than one-sixth, of the ratepayers in an area may, by notice in writing, require the chairman of the local authority to take a poll of the ratepayers for or against the adoption of all or any of the following resolutions to have effect within the area, viz.:—(*a*) That the sale of intoxicating liquors be prohibited. (*b*) That the number of licenses be reduced to a certain number, specified in the notice, not less than two-thirds of the existing number. (*c*) That no new licenses be granted. The persons entitled to vote are those whose names are on the voters' roll or rate-book of the municipality or division of which the area forms part, as rated in respect of property within the area. Resolutions (*b*) and (*c*) may be carried by a simple majority, but resolution (*a*) cannot be carried unless "a majority of two-thirds of the votes recorded in respect of that resolution . . . is in favour of its adoption."

(ii.) *Effects of Resolutions.* If resolution (*a*) is adopted, it comes into force on the 30th June in the year following that in which the notice requiring the poll was given. If (*b*) is adopted, the licensing authority must restrict the total number of licenses and certificates granted or renewed to or within the number specified. If resolution (*c*) is adopted the licensing authority may not grant any new certificates for a licensed victualler's license or wine-seller's license.

(iii.) *Re-submission of Resolutions.* If resolution (*a*) is adopted, a poll may not be demanded again until after the expiration of three years from the date of adoption, and in such case a poll may be taken on resolution (*a*) only. If (*b*) is adopted, a poll may be

again demanded on it or on the question of a further reduction, or on the adoption of the resolutions (*a*) or (*c*), but not until the expiration of two years after the last poll was taken. If resolution (*c*) is adopted, a poll may again be demanded on it or on resolutions (*a*) or (*b*), but not until the expiration of two years after the last poll was taken. If all the resolutions are rejected, a poll may not be demanded again until after the expiration of two years from the date of the last poll.

(iv.) *Resolutions Adopted, 1909.* At the end of the year 1909, resolution (*a*) was in force in three areas in Queensland, viz., the Tambourine shire, subdivision No. 3; Tiaro shire, Bauple district; and Inglewood shire (town of Silverspur). Up to the same date a poll as to resolution (*b*) had not been demanded in any area. The following statement shews the number of areas in which each resolution was either in force or precluded up to the 31st December, 1909:—

QUEENSLAND.—NUMBER OF AREAS IN WHICH LOCAL OPTION RESOLUTIONS WERE IN FORCE OR PRECLUDED FROM ADOPTION, 31st DECEMBER, 1909.

Particulars.	Resolution (*a*).	Resolution (*b*).	Resolution (*c*).	Total.
No. of areas in which resolutions in force ...	3	0	87	90
No. of areas in which resolutions precluded from being put in force	0	0	10	10
Total	3	0	97	100

The only resolution upon which a poll had been demanded within the metropolitan district (ten-miles radius) was resolution (*c*); this resolution is in force in thirty-three areas within the metropolitan district and has not been precluded in any area within that district.

5. **South Australia.** In this State the subject of local option is now regulated by Part V. of the Licensing Act 1908. Acts which formerly dealt with the subject were the Licensed Victuallers Amendment Act 1891, the Licensed Victuallers Further Amendment Act 1896, and the Local Option Act 1905.

Under the Licensing Act of 1908 each electoral district for the House of Assembly is constituted a local option district, and each electoral district may be divided into local option districts by proclamation of the Governor. A quorum consisting of 500 electors, or one-tenth of the total number of electors, whichever be the smaller number, in any district may petition the Governor for a local option poll. The persons entitled to vote at the poll are those whose names appear on the electoral roll and who reside in the local option district. The option extends to (*a*) publicans' licenses, (*b*) wine licenses, (*c*) storekeepers' Australian wine licenses, (*d*) storekeepers' licenses, and (*e*) club licenses.

(i.) *Resolutions to be Submitted.* The following are the resolutions which are to be submitted, under the Act of 1908, at every poll:—(*a*) That the number of licenses be reduced. (*b*) That the number of licenses be not increased or reduced. (*c*) That the number of licenses be increased in the discretion of the Licensing Bench. Any one of the resolutions is carried by a majority of the valid votes recorded. If the votes recorded in favour of resolution (*a*) do not constitute a majority, such votes are

to be added to the votes in favour of resolution (*b*). If the sum of the votes recorded in favour of resolutions (*a*) and (*b*) do not constitute a majority, such votes are to be added to those recorded in favour of resolution (*c*).

(ii.) *Effects of Resolutions.* As to each class of license of which there are not less than three licenses current within the local option district at the date of the poll, the first resolution is to be taken to mean that the number of licenses so current be reduced by one-third, and as to each class of license of which there are less than three current, the first resolution is to be taken as equivalent to the second resolution.

The constitution of special Benches consisting of three members, appointed by the Governor, is provided for in order to give effect to the first resolution. A special Bench also deals with resolutions for the reduction of licenses adopted before the passing of the Act of 1908, but not then given effect to.

(iii.) *Resolutions Adopted.* Under the Acts prior to that of 1908 resolutions to reduce the number of licenses had been adopted in nine districts, in four of which, however, the polls were subsequently declared void. Special Benches were appointed in January, 1909, to deal with the determinations of electors in those districts in which the results of the polls were in favour of reducing the number of licenses, viz., in the districts of Port Adelaide, East Torrens, and Sturt. In accordance with the determinations of these Benches it was decided in February and March, 1909, that the following licenses, namely—thirty-five publicans', one wine, eleven storekeepers' colonial wine, and one storekeeper's—should not be renewed.

(iv.) *Local Option Polls, 1910.* On the 2nd April, 1910, local option polls were taken under the Act of 1908 in twenty-four districts; the electors in the remaining nine local option districts did not petition for polls. Resolution (*a*), that the number of licenses be reduced, was carried in only one district; in the remaining 23 districts resolution (*b*), that the number of licenses be not increased or reduced, was carried.

6. **Western Australia.**—The law relating to Local Option in Western Australia is contained in Part V. (sections 75 to 86) of the Licensing Act 1911, which was assented to on 16th February, 1911, and came into force on the 7th April following. Prior to the passing of this Act there was no provision for any system of Local Option in Western Australia.

(i.) *Resolutions to be Submitted.* Under the above-mentioned Act, a vote of electors is to be taken in every district in or before April, 1911, and in every third year thereafter (1920 excepted). The resolutions to be submitted are:—(*a*) That the number of licenses existing in the district continue. (*b*) That the number of licenses existing in the district be increased. (*c*) That the number of licenses existing in the district be reduced. (*d*) That no licenses be granted or renewed in the district. If resolution (*d*) has been previously carried and is in force in the district the resolution submitted will be (*e*) That licenses be restored in the district. The resolutions (*a*), (*c*), and (*d*) are not to be submitted to the electors until after the 21st December, 1920. At the taking of every local option vote, the following questions will also be put before the electors:—(1) Do you vote that all new publican's general licenses in the district shall be held by the State? and (2) Are you in favour of State management throughout the district? Resolutions (*a*), (*b*), and (*c*) are deemed to be carried if a majority in number of the votes given is in favour of any such resolution, provided that if resolution (*b*) has not been carried, the votes given in favour of that resolution shall, if resolution (*a*) has been submitted at the same time, be added to the votes given for resolution (*a*) and shall be deemed to have been given in favour of resolution (*a*). Resolution (*d*) is carried if three-fifths at least in number of the votes given are in favour of that resolution, provided

that where it has not been carried, the votes given for it shall be added to those given for resolution (*c*). Resolution (*e*) is carried if three-fifths at least in number of the votes given are in favour of it. It is also provided that resolution (*d*) or (*e*) shall not be carried unless thirty per cent. or more of the number of electors in the licensing district vote for such resolution.

(ii.) *Effect of Resolutions.* If resolution (*a*) is carried, or in the case of a local option taken before the end of the year 1920, if resolution (*b*) is negatived, the number of licenses shall not exceed the number at the time of taking the vote. If resolution (*b*) is carried, the Licensing Court may increase the number of licenses. If resolution (*c*) is carried, the number of licenses at the time of taking the vote shall be reduced and may be reduced to three-fourths of such number. If resolution (*d*) is carried, no licenses shall be granted, renewed or transferred. If resolution (*e*) is carried, licenses may be granted, renewed and transferred, but so that the number of licenses shall not be greater than the number held when the resolution (*d*) was carried in the district, and if it is not carried, the resolution (*d*) previously carried shall continue to have effect.

7. **Tasmania.**—In this State the subject of local option is dealt with in Part VI. (sections 72 to 84) of the Licensing Act 1902. Other Acts which formerly dealt with the subject, but now repealed, are the Licensing Acts 1889 and 1890, the Inn Keepers Relief Act 1894, and the Licensing Act Amendment Act 1898. Under the Act of 1902, opposition to the grant of a license may be made (i.) by any resident ratepayer, (ii.) by petition of ratepayers resident in the neighbourhood, or (iii.) by local option poll.

(i.) *Opposition by Resident Ratepayer.* Any ratepayer resident in the district in which a house in respect of which an application for an hotel or publichouse certificate is intended to be made is situated, may, by giving five days' notice to the Clerk of Petty Sessions, oppose the grant of the certificate before the Licensing Bench. The objections which may be taken to the granting of a certificate for an hotel or publichouse license are as follows:—(*a*) That the applicant is of bad character; (*b*) that he has been convicted of certain specified offences; and (*c*) that the house in respect of which the application is made does not comply with the requirements of the Act. The objections which may be taken to the granting of a provisional certificate for an hotel license are:—(*a*) That the house does not comply with the requirements of the Act, and (*b*) that an hotel is not required in the neighbourhood.

(ii.) *Petition of Resident Ratepayers.* The ratepayers resident in the neighbourhood of a house in respect of which an application for a license is made may petition the Licensing Bench against the granting of such license. The neighbourhood referred to is defined as meaning a space within a radius of 200 yards from the front door of the house if within a city, within a radius of 500 yards if within a town, and within a radius of one mile if the house is not situate within a city or town. If the petition is directed against the granting of a provisional certificate, and is signed by a majority of the resident ratepayers, the bench must refuse to grant the certificate.

(iii.) *Local Option Poll.* Any number of ratepayers, not less than seven, resident in the neighbourhood of the house in respect of which a provisional certificate for an hotel license has been applied for, may require, by petition lodged with the Clerk of Petty Sessions, that a poll of the ratepayers resident in the neighbourhood be taken upon the question whether such provisional certificate be granted or not. If a majority of the votes taken be against the granting of the certificate the Licensing Bench must refuse to grant it.

Particulars as to operations under Part VI. of the Act are not available.

§ 5. Valuation of Commonwealth Production.

The want of uniformity in methods of compilation and presentation of Australian statistics renders it an extremely difficult task to make anything like a satisfactory valuation of the various elements of production. At present there is so little accurate statistical knowledge regarding such industries as forestry, fisheries, poultry, and bee-farming, that any valuation of the production therefrom can only be regarded as the roughest approximation. As a matter of fact complete information as to value of production in all States is available in regard to the mining industry alone, and even in this case adjustments have to be made before the returns are strictly comparable. Careful estimates have been made in some of the States in connection with the value of production from the agricultural and pastoral industries, and where such returns are not available estimates have been made which, it is believed, in the main give fairly accurate results. In the case of manufactories, five of the States in 1908 collected statistics of the value of production, while for the sixth State, Tasmania, an estimate has been prepared which it is believed gives a fair approximation. While the difficulties in the way of obtaining adequate valuations for all classes of production are serious enough at the present time they are still more pronounced in seeking to obtain information as to values for earlier years, when the returns were far more incomplete. It must be clearly understood, therefore, that the values given in the succeeding tables are, in general, approximations only. With the adoption of the forms and methods of tabulation agreed upon at the Statisticians' Conference of 1906 it is hoped, however, that at no distant date fairly complete valuations will be available for all industries, and the returns collected in 1909 certainly shew a considerable improvement over those of previous years. In the meantime the figures quoted must be taken with all their limitations. The table hereunder shews the approximate value of the production from all industries during the year 1909:—

ESTIMATED VALUE OF PRODUCTION FROM INDUSTRIES, 1909.

State.	Agriculture.	Pastoral.	Dairy, Poultry, & Bee-farming.	Forestry and Fisheries.	Mining.	Manufacturing.* (Val. added in Process of Manuf.)	Total.
	£1000	£1000.	£1000.	£1000.	£1000.	£1000.	£1000.
N.S. Wales ...	13,196	23,403	5,377	1,201	7,407	15,013	65,597
Victoria ...	12,036	8,546	5,511	742	2,901	12,809	42,545
Queensland ...	3,485	11,862	2,088	1,036	3,655	4,439	26,565
South Aust. ...	7,459	3,263	1,198	193	478	3,877	16,468
West. Australia	2,912	2,792	335	1,066	7,059	2,161	16,325
Tasmania ...	1,968	998	555	224	1,545	1,719	7,009
C'wealth ...	41,056	50,864	15,064	4,462	23,045	40,018	174,509

* These amounts differ from those given in Section XIII., Manufacturing Industries, owing to certain products which are there included having been included in Dairy Farming and Forestry in this table.

A glance at the figures in the above table will give some idea of the distribution of the great producing industries throughout the Commonwealth. Thus Victoria and New South Wales, as might naturally be expected, take the leading position in Agriculture, with South Australia and Queensland following. In Pastoral Production, New South Wales is easily first, with Queensland second. In dairy, poultry, and bee farming Victoria occupies the leading position, followed in order by New South Wales, Queensland, and South Australia, while in Forestry and Fisheries, and in Mining, New South Wales and

Western Australia occupy first and second place respectively with Queensland third in each case. Manufactories on an extensive scale are at present practically confined to New South Wales and Victoria.

The total production from all industries was £174,509,000, equal to an average of £40 7s. 8d. per inhabitant.

In the next table will be found the value of production at decennial intervals since 1871, and for the year 1909. The figures for the Census years have been taken from "Australia and New Zealand," and, in view of what has been said in a previous paragraph, must be regarded as very rough estimates only:—

ESTIMATED VALUE OF PRODUCTION, 1872 to 1909.

State.	1871.	1881.	1891.	1901.	1909.	Development* since 1871.
	£1000.	£1000.	£1000.	£1000.	£1000.	
New South Wales ...	15,379	25,180	36,740	38,954	65,597	4.3
Victoria	19,260	22,750	30,320	30,807	42,545	2.2
Queensland	3,995	10,200	14,274	16,933	26,565	6.6
South Australia ...	5,228	8,457	9,026	10,314	16,468	3.1
Western Australia ...	707	943	1,806	12,544	16,325	23.1
Tasmania	2,131	3,586	3,921	5,033	7,009	3.3
Commonwealth ...	46,700	71,116	96,087	114,585	174,509	3.7
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	
Average per head ...	27 17 2	31 1 3	29 19 9	30 2 6	40 7 8	1.4

* Ratio of value of production for 1909 to that for 1871.

APPENDIX.

Recent information and returns which have come to hand since the various sections of this book were sent to press, are given below.

SECTION II.

DISCOVERY, COLONISATION, AND FEDERATION OF AUSTRALIA.

§ 3. The Creation of the Several Colonies.

14. **Proposed Transfer of the Northern Territory to the Commonwealth, p. 22.** The Northern Territory Acceptance Act was assented to on the 16th November, 1910, and came into force by proclamation on the 1st January, 1911. Under this Act the Northern Territory was accepted by the Commonwealth as a Territory under the authority of the Commonwealth, by the name of the Northern Territory of Australia. The acceptance included the Palmerston and Pine Creek and the Port Augusta railways. (See page 711 hereof.) On the 25th November, 1910, the Northern Territory (Administration) Act, 1910, was assented to, and came into force on the same day as the Acceptance Act. The Administration Act provides for the appointment of an Administrator, for the continuance of State laws, and for the application of certain Commonwealth Acts in the Territory; it also directs that the State Courts should continue to have jurisdiction in the Territory, and it empowers the Governor-General to make Ordinances having the force of law in the Territory.

§ 7. Creation of the Commonwealth.

2. **Summary of the Commonwealth Constitution.** (i.) *Chapter I.—The Parliament. Part V., Powers of the Parliament (sections 51 to 60),* **p. 39.*** Two proposed laws for the alteration of the Constitution were submitted to the people for acceptance or rejection on the 26th April, 1911. They were (A) The Constitution Alteration (Legislative Powers) 1910, and (B) the Constitution Alteration (Monopolies) 1910. If, in a majority of the States, a majority of the electors voting approve the proposed laws, and if a majority of all the electors voting also approve them, they are presented to the Governor-General for the King's assent.

(A) *Constitution Alteration (Legislative Powers) 1910.* The object of this proposed law is to extend the powers of the Commonwealth Government (under section 51 of the Constitution) in four directions, viz.—(*a*) Trade and Commerce, (*b*) Corporations, (*c*) Industrial matters, and (*d*) Trusts and monopolies.

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* See also Section XXVII. *Industrial Unionism and Industrial Legislation*, para. 6, page 1067.

(*a*) *Trade and Commerce.* In Section 51, para. (i.) of the Constitution it is proposed to omit the words "with other countries, and among the States," so as to give the Commonwealth Parliament power to legislate with respect to trade and commerce, without limitation.

(*b*) *Corporations.* It is proposed to omit the words (para. xx.) "Foreign corporations, and trading or financial corporations formed within the limits of the Commonwealth," and to insert in lieu thereof the words—"Corporations including (*a*) the creation, dissolution, regulation, and control of corporations; (*b*) corporations formed under the law of a State (except any corporation formed solely for religious, charitable, scientific or artistic purposes, and not for the acquisition of gain by the corporation or its members), including their dissolution, regulation, and control; and (*c*) foreign corporations, including their regulation and control."

(*c*) *Industrial Matters.* In para. xxxv. it is proposed to omit the words "Conciliation and arbitration for the prevention and settlement of industrial disputes extending beyond the limits of any one State," and to insert in lieu thereof the words "Labour and employment, including (*a*) the wages and conditions of labour and employment in any trade, industry, or calling; and (*b*) the prevention and settlement of industrial disputes, including disputes in relation to employment on or about railways, the property of any State."

(*d*) *Trusts and Monopolies.* It is proposed to amend Section 51 of the Constitution by adding at the end thereof the following paragraph:—"(xl.) Combinations and monopolies in relation to the production, manufacture, or supply of goods or services."

(B) *Constitution Alteration (Monopolies) 1910.* The object of this proposed law is to alter the Constitution by inserting, after Section 51 thereof, the following section. "51A. When each House of Parliament, in the same session, has by resolution declared "that the industry or business of producing, manufacturing, or supplying goods, or of "supplying any specified services, is the subject of any monopoly, the Parliament shall "have power to make laws for carrying on the industry or business by or under the "control of the Commonwealth, and acquiring for that purpose on just terms any "property used in connection with the industry or business."

Complete particulars as to the results of the Referenda on the above proposals were not available in time for publication herein. The following table, however, shews the number of votes in favour of, and against, each of the proposed laws, as on the 1st May, 1911. The outstanding returns at that date were not sufficiently numerous to affect the results; it will be seen, therefore, that neither of the proposed laws was approved by the people.

COMMONWEALTH REFERENDA—RESULTS OF VOTING AS AT THE 1st MAY, 1911.

Particulars.	Legislative Powers.			Monopolies.		
	In Favour.	Against.	Majority Against.	In Favour.	Against.	Majority Against.
	Number.	Number.	Number.	Number.	Number.	Number.
New South Wales	128,011	225,202	97,191	127,656	222,402	94,746
Victoria	165,079	262,536	97,457	165,524	260,785	95,261
Queensland	56,737	78,829	22,092	57,648	77,320	19,672
South Australia	48,508	77,637	29,129	49,014	77,477	28,433
Western Australia	31,744	26,065	*5,679	32,303	25,460	*6,843
Tasmania	23,902	32,564	8,662	23,984	32,139	8,205
Commonwealth ...	453,981	702,833	248,852	456,109	695,583	239,474

* Majority in favour.

(ii). *Chapter VIII.—Alteration of the Constitution*, **p. 44.** *Footnote.* The Constitution has also been altered by the Surplus Revenue Act 1910 (for provisions of which see page 800).

SECTION IV.

POPULATION.

§ 4. Elements of Growth of Population.

3. **Net Immigration, p. 131.**—The following table gives particulars of net immigration for the year 1910 :—

NET IMMIGRATION,* 1910.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W.A.	Tas.	C'wlth.
Arrivals	273,573	222,457	91,221	84,039	31,403	35,377	95,692
Departures	270,402	211,852	81,066	74,157	24,538	38,508	58,145
Excess of arrivals over departures	3,171	10,605	10,155	9,882	6,865	—3,131	37,547

Note.— — signifies excess of departures over arrivals. * Figures for States represent Interstate and Oversea migration; those for Commonwealth represent Oversea migration only.

4. **Total Increase, p. 133.**—The following table gives particulars of the total increase in population for each State and for the Commonwealth during the year 1910 :—

TOTAL INCREASE OF POPULATION, 1910.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W.A.	Tas.	C'wlth.
Excess of births over deaths ...	29,286	16,705	10,425	6,484	4,845	3,466	71,211
Excess of arrivals over departures	3,171	10,605	10,155	9,882	6,865	—3,131	37,547
Total increase ...	32,457	27,310	20,580	16,366	11,710	335	108,758

Note.— — signifies excess of departures over arrivals.

§ 8. Enumerations and Estimates.

5. **Estimates of Population, pp. 140 to 144.**—The following table shews the estimated population of each State and the Commonwealth on the 31st December, 1910 :—

ESTIMATED POPULATION ON 31st DECEMBER, 1910.

Particulars.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wealth.
Males ...	879,955	671,308	321,920	231,999	164,828	95,539	2,365,549
Females ...	780,465	653,073	271,314	200,414	120,425	91,656	2,117,347
Total ...	1,660,420	1,324,381	593,234	432,413	285,253	187,195	4,482,896

SECTION V.

VITAL STATISTICS.

§ 1. Births.

1. **Male and Female Births, p. 166.**—The total number of male and female births registered, and the birth rates per 1000 of the population in each State and in the Commonwealth, during the year 1910 were as follows :—

BIRTHS AND BIRTH RATES, 1910.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
Males ...	23,368	16,412	8,260	5,423	3,855	2,888	60,206
Females ...	22,076	15,025	7,909	5,157	3,730	2,698	56,595
Total ...	45,444	31,437	16,169	10,580	7,585	5,586	116,801
Birth rates ...	27.56	24.12	27.58	25.08	27.17	30.26	26.40

§ 2. Marriages.

1. **Marriages, p. 179.**—The following statement shews the number of marriages registered in each State and the Commonwealth, and the marriage rates per 1000 of the mean population, during the year 1910 :—

MARRIAGES AND MARRIAGE RATES, 1910.

Particulars.	N.S W	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
No. of marriages	14,307	10,239	4,768	3,678	2,107	1,493	36,592
Marriage rates*	8 68	7.86	8.13	8.72	7.55	8.09	8.27

* Number of marriages, not persons married, per 1000 of mean population.

3. Deaths.

1. **Male and Female Deaths, p. 186.**—The number of deaths registered in each State and in the Commonwealth during 1910, and the death rates per 1000 of the mean population, are shewn in the following table:—

MALE AND FEMALE DEATHS AND DEATH RATES, 1910.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
Male	9,339	8,128	3,594	2,235	1,760	1,098	26,154
Female ...	6,819	6,604	2,150	1,861	980	1,022	19,436
Total	16,158	14,732	5,744	4,096	2,740	2,120	45,590
Death rates ...	9.80	11.30	9.80	9.71	9.81	11.49	10.30

SECTION VI.

LAND TENURE AND SETTLEMENT.

§ 2. Land Legislation in Individual States.

4. **South Australia and the Northern Territory, pp. 241-2. (See also Northern Territory, p. 255.)** Under the Northern Territory (Administration) Act 1910, which came into force on the 1st January, 1911, it is provided that no Crown lands in the Territory shall be sold or disposed of for any estate of freehold, except in pursuance of some contract entered into before the commencement of the Act.

SECTION VIII.

AGRICULTURAL PRODUCTION.

§ 4. Wheat.

1. **Progress of Wheat Growing, p. 366.**—The following table shews the estimated area under wheat and the prospective yields of wheat in each State and the Commonwealth for the season 1910-11:—

ESTIMATED AREAS UNDER WHEAT AND PROSPECTIVE YIELDS, 1910-11.

Particulars.	N.S.W.	Vic.*	Q'land.	S. Aust.	W. Aust.	Tas.	Cwlth.
Estimated area ... Acres	2,155,140	2,398,089	103,935	2,045,890	619,710	43,022	7,365,786
Prospective yield ... Bush.	23,500,000	34,813,019	1,310,171	24,375,835	7,594,264	1,071,248	92,664,537
Average yield per acre ...	10.90	14.52	12.61	11.91	12.25	24.90	12.58

* Final Figures.

SECTION XII.

MINES AND MINING.

§ 2. Gold.

2. **Production of Gold at Various Periods, p. 495.**—The Australian gold yield for 1910 is shewn in the subjoined table. The figures are open to final revision, but only to a slight extent:—

GOLD RAISED IN AUSTRALIA, 1910.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.*	W. Aust.	Tas.*	C'wealth.
Quantity ... Fine ozs.	189,214	578,860	440,784	12,000	1,470,627	45,000	2,736,485
Value ... ... £	803,730	2,458,841	1,872,331	50,973	6,246,826	191,148	11,623,849

* Approximate.

The quantity raised in New Zealand during the year 1910 was 446,192 fine ounces, valued at £1,895,303, making the total yield for Australasia 3,182,677 fine ounces, valued at £13,519,152.

SECTION XVII.

ROADS AND RAILWAYS.

§ 2. Railways. (b) Government Railways.

3. **Interstate Communication (page 701).**—The report of the Railway War Conference has been issued. Information in regard thereto may be found in *Section XXVIII., Defence*, page 100.

SECTION XIX.

COMMONWEALTH FINANCE.

§ 2. Consolidated Revenue Fund.

1. **Cost of Departments, etc., p. 814.—**

COST OF COMMONWEALTH DEPARTMENTS, ETC., 1909-10.—p. 815.

Departments, etc.	1909-10.
	£
Governor-General	21,908
Parliament	220,233
External Affairs	80,469
Attorney-General	32,349
Home Affairs	88,112
Treasury	74,108
Trade and Customs	777,788
Defence	1,534,881
Postmaster-General	3,786,755
All other expenditure	882,913
Total	7,499,516

13. **Home Affairs Department, p. 817.**

EXPENDITURE HOME AFFAIRS DEPARTMENT, 1909-10.—p. 818.

Details.	1909-10.
	£
Chief Office	11,454
Public Service Commissioner	15,952
Public Works	17,738
Census and Statistics	15,137
Meteorological Bureau	16,414
Rent, repairs, etc.	5,882
Reception of United States Fleet	...
Miscellaneous	5,535
Total	88,112

14. **Treasurer's Department, p. 818.**

EXPENDITURE TREASURER'S DEPARTMENT, 1909-10.—p. 818.

Details.	1909-10.
	£
Treasury	11,862
Old-age Pensions, salaries, etc.	36,423
Audit	8,593
Rents, repairs, etc.	3,410
Donation to Sicily earthquake relief fund	...
Coinage	10,043
Miscellaneous	3,777
Total	74,108

15. **Trade and Customs, p. 818.**

EXPENDITURE TRADE AND CUSTOMS, 1909-10.—p. 819.

Details.	1909-10.
	£
Chief Office	11,954
Customs (ordinary)	255,779
Patents	19,284
Trade Marks and Copyrights...	
Fisheries	5,605
Analyst	1,995
Audit (proportion)	7,426
Quarantine	23,355
Pensions and retiring allowances	8,058
Rents, repairs, etc.	9,994
Sugar bounties and expenses...	407,777
Bounties	5,885
New works, etc.	5,124
Miscellaneous	15,552
Total	777,788

17. **Defence, p. 819.**

EXPENDITURE, DEFENCE, 1909-10.—p. 820.

Details.	1909-10.
	£
Chief Office	26,366
Military	853,420
Naval	263,143
Audit (proportion)	954
Pensions and retiring allowances	781
Rents, repairs, etc.	29,621
New works, etc.	337,961
Miscellaneous	22,635
Total	1,534,881

18. **Postal, p. 820.**

EXPENDITURE, POSTAL DEPARTMENT, 1909-10.

Details.	1909-10.
	£
Chief Office	12,324
Postal department (ordinary)	3,123,357
Audit (proportion)	2,398
Pensions and retiring allowances	32,083
Rents, repairs, etc.	54,484
New works, etc.	555,557
Miscellaneous	6,552
Total	3,786,755

19. **Miscellaneous, p. 820.**

For £906,268 substitute £882,913.

SECTION XXV.

GENERAL GOVERNMENT.

§ 1. Scheme of Parliamentary Government.

7. Powers and Functions of the Governor-General and Governors (page 959).—The Rt. Hon. the Earl of Dudley, P.C., G.C.M.G., G.C.V.O., etc., will retire in July, 1911, from the Governor-Generalship of the Commonwealth; he will be succeeded by the Rt. Hon. Lord Denman, K.C.V.O., etc.

The Governorship of the State of Victoria will be vacated by Sir Thomas Gibson-Carmichael, Bart., LL.D., K.C.M.G., on 19th May 1911; his successor will be Sir John Fleetwood Fuller, Bart., who will be sworn in on the 24th May, 1911.

3. Administrative Government.

Tasmania page 978).—Other Acts now administered by the Chief Secretary's Department are as follow:—Explosives, Factories, Wages Boards, Machinery, Medica Practitioners, and Midwifery Acts. The word Coroners should be deleted from this list of Acts administered.

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